THE EFFECTS OF LEADER MICROBREAKS ON TRANSFORMATIONAL LEADERSHIP BEHAVIOR AND FOLLOWER JOB SATISFACTION: LMX AS A CROSS-LEVEL MODERATOR

BY

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DISSERTATION

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ABSTRACT

Microbreaks have been receiving growing scholarly attention as an effective energy management strategy at work. As previous research has mostly examined microbreaks to show their within-person benefits for individuals' well-being and task performance, this study turns to interpersonal effects of microbreaks and their boundary conditions. Integrating Affective Events Theory and the Emotion As Social Information model, the study tests the crossover effects of leaders' microbreaks to explain how microbreaks influence not only actors themselves but also their follower. An experience sampling method was used to collect three daily surveys from 118 leader-member dyads (236 full-time employees) for five workdays (n = 511 day-level observations). Multilevel path analysis results found that on days when leaders take more morning microbreaks at work, they have higher levels of state positive affect in the afternoon, which in turn is linked to greater transformational leadership behavior (reported by follower) as well as the follower's own job satisfaction in the afternoon. Overall, the findings suggest that leaders' microbreaks can be positive affective events for both leader and follower. Importantly, leader-member exchange (LMX) moderated (strengthened) the indirect effects of leader microbreaks on the two dependent variables via the leader's increased positive affect. The indirect effects of leader microbreaks on transformational leadership behavior and follower job satisfaction via the leader's positive affect, were much stronger for employees in high LMX than employees in low LMX. Theoretical and practical implications, limitations, and future research directions are discussed.

To my wife, Secbyel Lee, mother, Yeonja Ji, parents in law, Sunhee Lee and Hyongkyun Kim, daughter, JooAh Kim, and Hyunguk Park

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CHAPTER 1: INTRODUCTION

Microbreaks refer to short, informal respites that workers voluntarily take based on their need for momentary recovery at work (Kim, Park, & Niu, 2017). Unlike formal work breaks (e.g., lunch hour), microbreaks are motivated by employees' willingness and need for recovery in the work setting. As modern-day employees face extensive work demands and long working hours, the topic of microbreaks has received increasing research attention as they are important, timely recovery opportunities at work. Accordingly, several researchers have recently examined the benefits of short work breaks on employee's psychological well-being (Hunter & Wu, 2016; Kim et al., 2017; Kühnel et al., 2017; Zacher et al., 2014) and sales performance (Kim, Park, & Headrick, 2018). These studies support the idea that employees voluntarily take microbreaks for recovery purposes at work (Hunter & Wu, 2016; Kim et al., 2017).

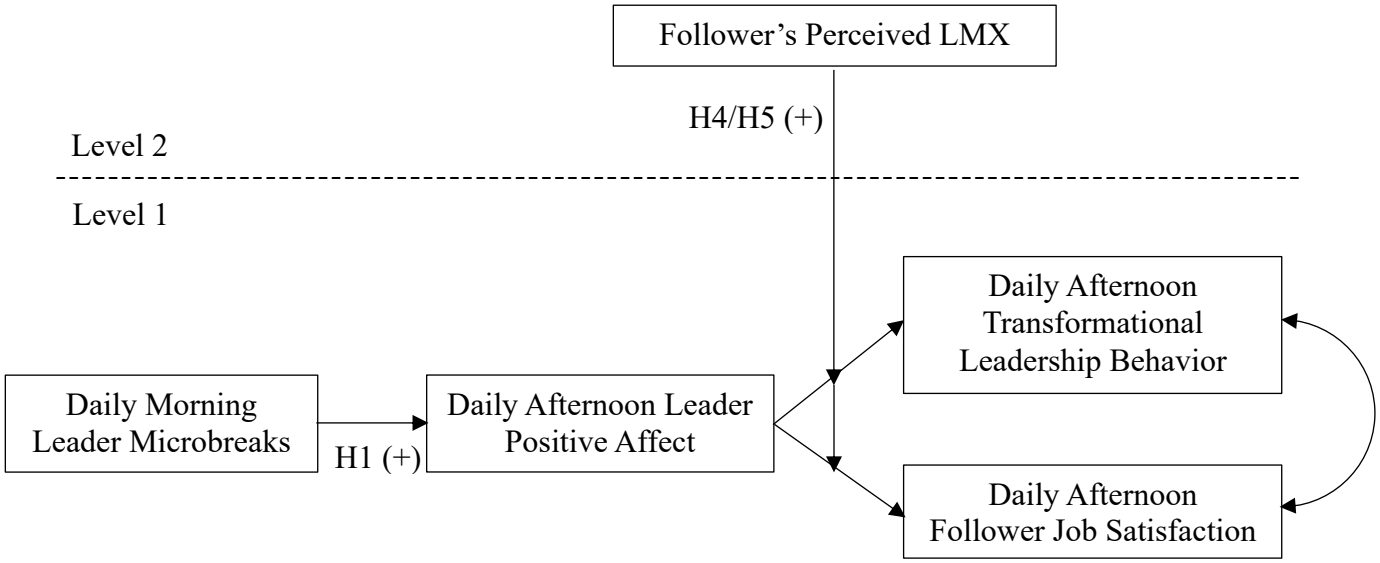
While previous studies on microbreaks have provided valuable insights into the benefits of microbreaks for individuals' well-being and sales performance outcomes (cf. Hunter & Wu, 2016; Kim et al., 2017, 2018; Kühnel et al., 2017; Zacher et al., 2014), their effectiveness for workgroups or organizations above and beyond the benefits for individuals is still unclear. In other words, we have less scholarly knowledge about whether employees' common recovery activities in the work setting (e.g., microbreaks) may or may not be beneficial for today's workplace above and beyond individual's work-outcomes. Because microbreaks take place in the work setting, employers may be concerned about whether microbreaks are detrimental to workplace morale and group productivity despite their advantages on individual well-being. Accordingly, many organizations believe that employees' nonwork-related activities at work should be prohibited or at least unwelcomed for other workers in the organization (cf. Sackett, 2002). Thus, it is valuable, to develop theory and study a wide array of potential outcomes of

microbreaks that contributes to have a better understanding of the effects of microbreaks for both employees and the organizations.

Therefore, the current study investigates new outcomes of microbreaks by focusing on leader's behavioral outcome as well as follower's job attitudes. Specifically, employing an Experienced Sampling Methods (ESM) with a dyadic data structure (i.e., leader-member), the current study explores whether leader's microbreaks influence his or her transformational leadership behavior as well as follower's job satisfaction via leader's increased positive affect. Additionally, I propose the quality of individual's leader-member exchange (LMX; Graen & Uhl-Bien, 1995) as a cross-level moderator to further answer *under what condition* leader's microbreaks are more likely to have an impact on others at work (e.g., followers). In sum, this research presents a framework to investigate whether, how, and when leader's microbreaks influence one's behavioral outcome and follower's job satisfaction through leader's affective resource (i.e., positive affect; See Figure 1 for the conceptual model).

Figure 1

Proposed model



H2: Indirect effect of leader microbreaks on transformational leadership behavior (+)

H3: Indirect effect of leader microbreaks on follower job satisfaction (+)

Note. Control variables are not included in this figure for simplicity: Leader's morning positive affect, lunch-hour satisfaction and day-specific work demands were controlled for leader's afternoon positive affect. Follower's morning positive affect was controlled for their rating on leader's transformational leadership behavior. Follower's morning positive affect, lunch-hour satisfaction, and day-specific work demands were controlled for follower's job satisfaction.

The current study extends the current recovery and leadership literature in three unique ways. First, this study expands the work breaks literature by examining the positive effects of leader's daily microbreaks on their positive affective state which, in turn, may lead to desirable leadership behavioral outcomes. Because microbreaks occur at work, they have immediate effects on actor's psychological well-being (Kim et al., 2017; Zhu et al., 2018) as well as performance (Kim et al., 2018). Thus, the effects of recovery activities at work (i.e., microbreaks) could influence not only actor themselves but also others who interact with the actor within workgroups. However, we do not have an understanding about such interpersonal effects of microbreaks yet because previous research only focused on within-person effects of microbreaks (cf., Kim et al., 2017; 2018; Zhu et al., 2018). Accordingly, this study investigates important benefits of microbreaks, including transformational leadership behavior, focusing on the leader-follower relationship. Given that leadership behaviors influence follower's behaviors which facilitates team and organizational performance (Lanaj, Johnson, & Lee, 2016), this study provides us more insight that expands the effects of microbreaks to others within the workgroup.

In the meantime, the current study employs more rigorous methodological design (i.e., daily dyadic study) to address the benefits of microbreaks. For example, this study separates measurement time points for predictor (i.e., leader's microbreaks) and mediator (i.e., leader's positive affect) to have better causal inference support that has been raised in previous studies (Kim et al., 2017, 2018). Previous works assessed microbreaks and acute outcomes (e.g., affective well-being) at the same time using single source of rater which leave the concern about causal inference with temporal order issue. This study, therefore, separates the time points on microbreaks and positive affect and uses different raters for mediator and outcome variables (i.e., transformational leadership behavior and follower's job satisfaction) to reduce potential concern

about common-methods bias from single source data (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Thus, the current study provides a more thorough empirical examination of important benefits of microbreaks by using an ESM dyadic design and collecting data from multiple sources.

Second, by integrating the Affective Event Theory (AET; Weiss & Cropanzano, 1996) and Emotion As a Social Information (EASI; Van Kleef et al., 2004; 2009), my study tests leader's microbreaks as affective events that not only influence his or her own affective states and behaviors but also have impacts on his or her follower's responses to their job. AET posits that an individual's fluctuations in an affective state explain one's cognitive and behavioral change in a given work day. That is, individuals experience events that lead to their affective states which, in turn, influence their own attitudinal or behavioral change as well as others' affective states within the social group as crossover effects (Cropanzano, Dasborough, & Weiss, 2017). Crossover effects refer to the phenomena that an individual's emotions, experiences, and resources are transferred to other individuals within social contexts, such as workgroups (Westmen, 2001).

For example, when a leader drinks a cup of coffee or takes a relaxation break, s/he feels momentarily refreshed from work. In the meantime, a follower may perceive leader's positive affect (e.g., facial expression) from this momentary recovery activity. Then, the follower could use the positive reflective event to shape their daily job satisfaction on that day. Because the leader is in a strategic position and has authority over the follower's work life, the leader's affective state could be important information for followers. In addition, Cropanzano and colleagues (2017) addressed that transferring leader's affect and experience to followers is common in the work setting. Thus, examining the relationships among leader's positive events

(i.e., microbreaks), their affective states and behaviors, as well as follower's job satisfaction, indicate leader's momentary recovery at work as affective events for both leaders and followers, which aligns with the idea of the AET. As a result, this study directly expands the AET literature by addressing crossover effects of leader's affective event on his or her follower's job satisfaction.

Third, scant research has identified moderators on the relationships between work breaks and outcomes despite their importance for theory development and stress intervention designs (Sonnentag et al., 2017; Trougakos & Hideg, 2009). Thus, I propose LMX as a boundary condition on the relationship that leader's positive affect from microbreaks has with his or her behavioral outcomes as well as follower's job satisfaction. The LMX perspective posits that a leader forms and maintains a different quality of relationship with each follower within the group (Liden & Maslyn, 1998). Specifically, a leader spends nonequivalent amounts of time and resources to develop a relationship with each follower, and the quality of each follower's experienced interactions with the leader may not be equal based on the degree of each relationship (See Bono & Yoon, 2012 for a review). Because the degree of transferred experiences or affect from leaders to followers differs in each relationship, LMX may be an important boundary condition for the crossover effects of leader's affect on followers' perception and attitudes (McCauley, 2012). Examining this boundary condition of LMX aligns with the EASI (Van Kleef et al., 2004) perspective as the theory premises that the transmission of an individual's affect on another's affective responses and proximal outcomes (e.g., attitude, behavior) depends on the quality of that particular relationship. As such, I propose that employees with a stronger LMX relationship with their leaders are more likely to perceive their leader's positive affect and be influenced for their daily job attitudes reflected by higher job

satisfaction. As testing these moderation effects is necessary for enriching theories, this study contributes to the recovery and leadership literature for theory development (Westman & Chen, 2017).

CHAPTER 2: LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Microbreaks and Positive Affect

Drawing upon the resource-perspective (Hofboll, 1989), I conceptualize employees' microbreaks as their recovery opportunities at work. According to Hobfoll (1989), individuals have limited personal resources (e.g., energy) necessary for various demands of their life including work. Resource depletion from work demands or stressful situations may cause strains and/or malfunctioning of one's psychological and physical state. In the workplace, workers' physical and psychological resources become depleted over time as they use their resources to deal with work demands and job stressors. Thus, individuals should conserve the appropriate level of personal resources and avoid resource losses. In other words, employees should maintain their personal resources to continue work efforts that require resource consumption at work.

Given that employees deal with a significant and continuous amount of daily work demands and job stressors daily, they may require *timely* opportunities to replenish depleted resources throughout the course of the workday. The effort-recovery model (Meijman & Mulder, 1998) further explains that employees can recover diminished self-regulatory resources and generate resource surpluses by undertaking timely respites. This suggests that workers should have opportunities to recover their functional systems (e.g., cognition, emotion) from stressful work demands and stress. In this regard, microbreaks can provide the appropriate disengagement from work and generate personal resources through various preferred activities (e.g., relaxation). Accordingly, empirical studies demonstrate that microbreak activities have been shown to halt continuous resource consumption and renew spent resources (i.e., Hunter & Wu, 2016; Kim et al., 2017; Zacher et al., 2014). In addition, microbreaks have been found to facilitate employees' positive affect, which in turn, leads to greater sales performance (Kim et al., 2018). Engaging in

self-chosen and preferred activities during microbreaks increases affective and psychological resources at work such as energy, motivation, and concentration (Hunter & Wu, 2016). Therefore, workers can more effectively manage their resource levels (e.g., positive affect) to avoid burnout and to stay focused on tasks throughout taking microbreaks within the workday.

In this study, four sub-dimensions of leader's microbreak activities in previous research—relaxation, nutrition-intake, socialization, and cognitive activities—are investigated as predictors of leader's positive affect (Kim et al., 2017, 2018). According to past research (i.e., Hunter & Wu, 2016; Kim et al., 2017, 2018; Zacher et al., 2014), microbreaks are distinguishable from other types of work breaks with three key characteristics—voluntary, momentary, and preferred. Because all four types of prototypical microbreak activities include these characteristics, the current study focuses on leader's overall microbreak activities and their effects. Accordingly, I propose that a leader's overall microbreaks at work may elevate his or her positive affect as s/he takes the timely opportunities to momentarily recover from work stress through various types of microbreak activities.

Hypothesis 1: Leader's microbreaks (morning working hours) will be positively related to his or her own positive affect during the afternoon.

Indirect Effects of a Leader's Microbreaks on Follower's Job Satisfaction via the Leader's Increased Positive Affect

Individuals' positive affect can be understood as their emotional resource that is utilized in their work-related behaviors (Amabile, Barsade, Mueller, & Staw, 2005; Fredrickson, 2001). The current study defines positive affect as a pleasant and happy feeling state or good mood that can be reinvested into work-related tasks (Estrada, Isen, & Young, 1997) focusing on high activation of positive affect (Watson, Wiese, Vaidya, & Tellegen,1999). In this section, I integrate

AET (Weiss & Cropanzano, 1996) and EASI (Van Kleef et al., 2009) to explain how leader's positive affect would mediates the relationship between leader's microbreaks and transformational leadership behavior as well as follower's job satisfaction. According to AET perspective, microbreaks can be positive episodes that generate individuals' positive affective states, and these resources will be used to facilitate individuals' effective cognitive and behavioral patterns such as task achievements at work (Beal et al., 2005; Weiss & Cropanzano, 1996). In the context of leaders' jobs, leaders' affective states play an important role in their leadership and have an important influence on their followers' work experiences (Beal, Trougakos, Weiss, & Green, 2006; Humphrey, 2012). As leaders frequently interact with their followers for work-related purposes (e.g., meeting, feedback), their positive affect expressed in the social interaction will be an important resource (e.g., social and emotional support or pleasant interpersonal interaction) for their followers. Subsequently, the positive affect and interaction experienced by followers will be transferred to followers' positive evaluations of daily work. Thus, I argue that state positive affect from microbreaks may lead to better leadership behaviors and have impacts on their followers.

Transformational Leadership Behavior. Transformational leadership behavior refers to a leader's performance and activity that promote his or her follower's work-related outcomes by motivating and inspiring members, acting as role models in the groups, initiating innovative solutions to the tasks, and suggesting problem-solving strategies (Bass & Riggio, 2006). There are several reasons to focus on transformational leadership behavior as an outcome of leader's microbreaks through positive affect in this study. First, transformational leadership behavior has been considered as one of the most effective *work-related* leadership behaviors in previous organizational science research (Bass & Riggio, 2006; Judge & Piccolo, 2004). For example,

transformational leadership behavior has been found to be positively associated with a multitude of follower's work outcomes, including job attitudes, well-being, self-efficacy, creativity, and proactive behaviors (DeRue, Nahrgang, Wellman, & Humphrey, 2011; Fu, Tsui, Liu, & Li, 2010). Second, unlike other types of leadership styles, transformational leadership behavior has been conceptualized as a daily behavioral variable in previous research (Breevaart et al., 2014; Lanaj et al., 2016). In other words, the degree of leader's transformational leadership behavior is not static but involves a dynamic nature. Third, positive affect plays an essential role in determining the quality of transformational leadership behavior. Transformational leadership behavior requires social interactions with one's followers (e.g., expressing confidence, encouraging cooperation, or using inclusive languages). Given that an individuals' affective state plays an important role in determining the manner and meaning of social interactions (Burke, Weir, & Duncan, 1976), leader's positive affect may promote their transformational leadership behaviors. In sum, this study proposes that transformational leadership behavior is an appropriate outcome of leader's microbreaks via increased positive affect.

According to Watson and colleagues (1999), an individual's affect represents one's subjective, emotional components of behavioral systems. While positive affect activates one's behavior, negative affect hinders behavioral activation. That is, momentary positive experiences generate positive affect which, then, encourages individuals to seek underexplored paths of thoughts and actions rather than typical, automatic behavioral options. This idea aligns with the episodic model of affective influences on performance (Beal, Weiss, Barros, & MacDermid, 2005) as the model theorizes that an individual's affective state influences one's cognition and behavioral styles that are conducive to target behaviors. As such, workers with higher positive affect are more likely to spend their emotions and resources into their work-related tasks than

those who have lower positive affect (Kaplan et al., 2009). Thus, I propose positive affect as an appropriate state level predictor of leadership behavior and as a key mediator to explain the relationship between leader's microbreaks and his or her transformational leadership behavior.

Drawing upon AET (Weiss & Cropanzano, 1996), I propose indirect effects of leader's microbreaks on subsequent outcomes via increased leader's positive affect. Weiss and Cropanzano (1996) argue that individual affect is fluctuating within the day by different episodic events. These series of events are accompanied by an individual's emotional responses that influence concurrent changes in attitudinal, cognitive, and behavioral outcomes. That is, an individual's affective states explain the relationship between affective events and his or her performance-related behavior. Given that an individual's engagement in microbreaks fosters one's positive affective state (e.g., satisfaction, joy, refreshment), these microbreaks can be positive affective events that may facilitate his or her performance-behavior outcome. Thus, leader's microbreaks are conceptualized as the proximal causes of his or her state positive affect which, in turn, lead to greater transformational leadership behavior.

> ***Hypothesis 2:*** There will be an indirect relationship between a leader's microbreaks (morning working hours) and afternoon transformational leadership behavior rated by his/her follower through the leader's increased positive affect.

Follower's Job Satisfaction. Job satisfaction refers to "a positive (or negative) evaluation judgment one makes about one's job or job situation" (Weiss, 2002, p. 175). Over the past half-century since the 1930s, job satisfaction has received significant research attention as an important indicator of employee's work-related outcomes (Judge, Weiss, Kammeyer-Mueller, & Hulin, 2017). A large-scale meta-analysis study found a correlational relationship between job satisfaction and performance across industries (Judge, Thoresen, Bono, & Patton, 2001),

suggesting that job satisfaction is a meaningful attitudinal outcome that indicates the quality of employees' performance. Although job satisfaction construct has been traditionally known as a cognitive or attitudinal work outcome, recent research has stated out that daily job satisfaction can be viewed as one's affective state (Fisher, 2000). An individual's daily flow of affect plays an important role in emphasizing his or her work experience and following attitudes at work (Judge et al., 2017). Given that an individual's affective state accounts for one's evaluation of workplace experiences and other contextual events (Weiss, 2002), one's work events that cause affective responses influence his or her perceived job satisfaction. Therefore, I propose job satisfaction as an acute outcome of a leader's positive affective state, particularly suggesting crossover effects of leader's positive affect on follower's job satisfaction.

According to the EASI perspective (Van Kleef et al., 2009), an individual's emotion is understood as others' social information that can be used to influence their affect, attitudes, and behaviors within the group. As such, an individual's affective state can be affective information and event for others to explain the context within the group. This transference of emotion occurs via two processes: *contagion* process and *signaling* process. In the contagion process, the transfer of an individual's emotion to others occurs by catching and experiencing the emotion *unconsciously* and *unintentionally* (Hatfield, Cacioppo, Rapson, 1994). This implicit process in which one's affect influences another's consequential affective, attitudinal, or behavioral outcomes, is automatically evoked within the group (Fujimura, Sato, & Suzuki, 2010). These automatic processes occur daily within a social group when an individual mimics others' emotion by showing similar or same facial, vocal, or gestural expressions. As such, individuals have a tendency to synchronize and converge on emotion with others in a social group (Hatfield et al., 1994). In the workplace, the process of emotional contagion takes place from leader to followers

in leader-member relationships because emotion tends to be transferred from high-power individuals (e.g., leaders) to low-power individuals (e.g., followers). For example, Sy, Cote, and Saavedra (2005) found that followers experienced more positive experiences when their leaders were in a positive mood.

In the signaling process, an individual's affect is *cognitively* and *intentionally* observed by others, and then this assessment of another's affective state plays a role in understanding the situation and the environment (Van Kleef et al., 2009). An individual's (e.g., leader) emotion conveys to a meaningful information to the partner (e.g., follower) within a social group about one's (e.g., leader) affective state toward the social context (Van Kleef et al., 2004). As a response, the partner (e.g., follower) consciously makes a judgment on his or her surroundings or creates an appropriate follow-up action based on this affective information from another one (e.g., leader; Van Kleef et al., 2009). For example, an individual's expression of positive affect signals security, warmth, support, or intention to be attached to others (Van Kleef, De Drue, & Manstead, 2010). To put it into the work context, an individual's positive affective state benefits not only oneself but also others in the workgroup, indicating that affect acts as a social information. Given that individuals with less power (e.g., followers) pay particular more attention to those with authority (e.g., leader), leader's affective state should be the most relevant affective social signal/information to followers. Therefore, followers will evaluate their workplace experiences using their leader's affective information (Barsade & Gibson, 2007; Melwani & Barsade, 2011).

Combining the above arguments together, I propose that leaders' microbreaks can be affective events for both themselves and their followers because leaders' positive affective states deriving from their microbreaks may have impacts on others within the workgroup (Cropanzano

et al., 2017). Employees' workplace life is strongly influenced by their leader through different types of social interactions, such as face-to-face conversations, dialogues during the meeting, or observation of leader's behaviors. In these different forms of social interactions and events, followers will have multiple opportunities to observe their leader's behaviors and detect their leader's affective states. Therefore, the transmission of a leader's affect to his or her follower's affective states and attitudes may begin from the leader's affective events (e.g., microbreaks).

According to Gooty et al.'s (2010) review study, followers evaluate their leader's affect and behavior as either favorable or unfavorable affective events at work. Unfavorable negative affective events (e.g., abusive supervision) from their leader are positively associated with their negative affect and aversive outcomes at work. As such, leader's affective events will account for the change in their affective states and behavioral outcomes as well as their follower's job attitudes aligning with the theorization of AET. Cropanzano and colleagues (2017) argued in their review paper that leader's affective experiences can be affective events for followers regarding their affective, attitudinal, and behavioral changes at work. That is, a leader's positive affect following engagement in microbreaks will allows followers to experience positive affective states that will lead to a more favorable evaluation of their job (i.e., job satisfaction). This proposition is also congruent with the EASI perspective (Van Kleef et al., 2009) as the model theorizes that lower level of individuals (e.g., followers) are motivated to observe higher level of individuals' (e.g., leaders) affective states and utilize them as their social information to understand and evaluate the contexts and environments (Van Kleef et al., 2004, 2010). Therefore, it is hypothesized that leader's microbreaks are affective events for both leaders and their followers that account for both leader's and follower's workplace affects and attitudes.

Hypothesis 3: There will be an indirect relationship between leader's microbreaks

(morning working hours) and follower's afternoon job satisfaction through leader's increased positive affect.

LMX as a Cross-Level Moderator

The interpersonal effects of an individual's affective state depend on the quality of the relationship between the actor (i.e., leader) and the partner (i.e., follower; Van Kleef et al., 2009). In this section, I propose LMX would moderate the relationship between leader's positive affect and the two outcomes (i.e., leader's transformational leadership behavior, follower's job satisfaction). The LMX literature has been based on the theoretical premise that leaders form a different quality of relationship with their followers (Liden, Erdogan, Wayne, & Sparrow, 2006). That is, leaders and followers, develop unique, dyadic relationships and maintain ongoing relationships through continuous positive interactions and experiences with each other (Tse et al., 2018).

Followers in high LMX would expend their efforts to experience their leader's positive emotional display, such as smiling, warmth, or consideration. In other words, followers with high LMX would like to monitor or detect their leader's positive affect and behaviors at work to confirm and maintain their stored positive perception of their leaders (e.g., perceived LMX), whereas followers in low LMX would not be motivated to perceive their leader's positive emotion (Van Kleef et al., 2009). For example, leader's positive affect and following behaviors will be readily perceived by their followers in high LMX, and they would utilize these positive leadership behaviors to be congruent on their existing positive perception on their leaders. However, followers in low LMX won't be aware of their leader's positive affect nor capture positive behaviors because they do not have personal intention or commitment to evaluate their leaders in a more favorable or positive way. Accordingly, followers with high LMX are

motivated to find positive social information to generate and confirm their positive relationship with their leaders (Van Kleef, De Dreu, & Manstead, 2010). Thus, I anticipate that followers with high LMX are more likely to observe and report their leader's transformational leadership behaviors when their leaders show positive affect and behaviors toward their members.

From a leader's perspective, leaders selectively maintain high or low LMX quality with their followers, portrayed by high trust, interactions, support, and formal/informal rewards, or low trust, interactions, support, and rewards (Liden & Maslyn, 1998). Thus, the degree of a leader's interest in and attention to their followers may differ from one another based on the quality of each one-on-one relationship. Following this argument, leaders sort their followers into an in-group with higher quality LMX or an out-group with lower quality LMX, and manifest different attitudes and behaviors to each group (Tse, & Ashkanasy, Dasborough, 2012). Leaders have a different level of expectations, needs, attentions, and evaluations based on the quality of their personal relationship with their followers. Thus, leaders may provide more positive, friendly, and supportive behaviors to those who have high LMX than those who have low LMX when they are in positive affective states. Leaders want to develop high levels of trust, care, and consideration with their high LMX followers (See Cropanzano & Mitchell, 2005, for a review). In other words, they systematically invest their resource (i.e., positive affect) in facilitating the quality of their individual relationship with high LMX followers. Therefore, I predict that leaders are more likely to show their desirable and favorable behavior (e.g., transformational leadership behavior) to employees in high LMX than those in low LMX when they have high level of positive affect.

EASI model also posits the nature of individual relationships (e.g., leader-follower) tends to determine the meaning and consequences of an individual's emotional expressions to

others within the social context (Van Kleef et al., 2009, 2010). Both contagion and signaling processes account for the effects of leader's positive affect on their follower's responses to the environment (e.g., job satisfaction), but the strength of the relationship will vary across different levels of leader-member relationships (Van Kleef et al., 2009). As such, followers react to their leader's affective states in different manners and tones on the basis of their LMX quality. Followers with high LMX have tendencies to be congruent with their leader's affective state because they have mutual, beneficial, trustful, and safe relationships with their leaders (Cropanzano & Mitchell, 2005; Uhl-Bien & Maslyn, 2003). For example, a leader's positive affective state may drive high LMX followers to evaluate their work environment in a more positive way because the leader's positive affect is very important social information for high LMX members. Therefore, they are also motivated to evaluate their workday consistent with their leader's positive affect when they are aware of their leader's positive affective state. However, followers in low LMX may not consider their leader's affective state as important to determine the quality of their workplace life and environment because they are less likely to rely on their leaders.

In sum, given that a leader can be a representative source of the social information in the workplace, the relationship between leader's positive affect and following consequences will depend upon how followers perceive the quality of individual relationship with their leaders (i.e., LMX). Thus, leader's positive affect may have a stronger impact on followers in high LMX than those in low LMX regarding ratings on leadership behaviors and follower's job satisfaction.

> ***Hypothesis 4:*** Perceived LMX at the between-person level will moderate (strengthen) the day-level relationship between leader's positive affect and their (a) transformational leadership behaviors and (b) follower's job satisfaction, such that the relationships will

be stronger (versus weaker) for high (versus low) LMX members, respectively.

Taken together, the combined hypotheses and theorizations further imply that the magnitude of the indirect effects of leader's microbreaks on transformational leadership behavior and follower's job satisfaction via leader's positive affect, may differ by the levels of LMX. Followers in high LMX are more likely to pay attention to leader's experience and affective state than followers in low LMX (Cropanzano & Mitchell, 2005; Van Kleef et al., 2009). Therefore, I propose that LMX will strengthen the positive relation between leader's morning microbreaks and his or her afternoon transformational leadership behavior as well as follower's afternoon job satisfaction via increased leader's afternoon positive affect, such that the mediation effects will be stronger.

> ***Hypothesis 5:*** Perceived LMX at the between-person level will moderate (strengthen) the indirect effects of leader's microbreaks on (a) transformational leadership behavior and (b) follower's job satisfaction via the leader's increased positive affect, such that the indirect effecs of leader's microbreaks will be stronger (versus weaker) for high (versus low) LMX members, respectively.

CHAPTER 3: METHODOLOGY

Participants and Procedure

Institutional Review Board (IRB) approval (#18848) was granted by the University of Illinois at Urbana-Champaign (See Appendix A). Participants were recruited through two methods: the author's personal network and online community websites for workers in South Korea (i.e., Clien.net, café.naver.com, and café.daum.net). The author contacted and obtained approval from six employers or upper managers from 3 education and 3 marketing organizations in South Korea for their employees' study participation. Their Human Resources (HR) managers posted the advertisement on their online intranet or on the bulletin board of the office building. These recruitment advertisements included information about the study's goals, the procedure for participating in the survey, compensation for participation ($30 online-gift card per person), and the researcher's contact email address. The same advertisement was posted on the aforementioned three websites for office workers to increase the sample size. To be eligible for participation, three criteria were required to be met: participants were full-time employees who had a regular daytime work schedule (no shift workers); worked for the same work hours at the same physical office space with their leader; and had a fixed lunchtime for an hour break (i.e., 12−1 p.m.).

Interested employees contacted the researcher via email including their partner leader's email address to lessen selection bias (leader may have multiple followers, but followers usually have one leader). The researcher replied to the interested follower-leader pairs with the consent form and initial survey link to assess demographic, work information, and perceived LMX. Completing the initial survey indicated their consent to participate in the study. Two hundred

sixty-three eligible dyads (526 individuals) participated in the initial survey.[1] In this survey, leader participants were asked to self-generate an ID code (e.g., 8 digits) and share it with their follower participants. They used it as a unique dyadic ID code throughout the study to allow me to match responses across dyads and measurement occasions.[2] Two weeks later, I emailed participants three survey links per day (Time 1, 2, and 3) for five consecutive workdays.

For the leaders, Time 1 (T1) survey (e.g., around 8:30 a.m.) assessed their morning affective state at work as a control variable. Time 2 (T2) survey (e.g., around 1:00 p.m.) measured their daily microbreaks as an independent variable and lunch hour satisfaction as a control, while Time 3 (T3) survey (e.g., around 5:45 p.m.) assessed their affective state during the afternoon as a mediator and work demands as a control variable. *For followers*, T1 survey assessed their morning affective state at work as a control. T2 survey measured their lunch hour satisfaction as a control. T3 survey asked the followers to evaluate their leader's transformational leadership behavior during the afternoon of the workday as well as their own job satisfaction as a dependent variable and work demands as a control variable (See Table 1 for the assessment summary).

[1] From the personal network, 149 dyads were recruited, and 114 dyads were recruited from the online community websties. There were no systematic differences between the two groups regarding their age, job tenure, relationship tenure with their leader, and LMX (*p*s = .26 ~ .71).

[2] For example, leader participants set their own 8-digit ID code that was also agreed with their follower participants. Then, both leader and follower participants were requested to enter their dyad ID code in each daily survey.

Table 1

Summary of Surveys

Time of Survey	Leader	Follower
Initial Survey	Demographic information	Demographic information LMX
Daily T1 (around 8:30)	Morning PA (C)	Morning PA (C)
Daily T2 (around 13:00)	Micro-breaks (IV) Lunch-hour satisfaction (C)	Lunch-hour satisfaction (C)
Daily T3 (around 18:00)	Afternoon PA (ME) Daily work demands (C)	Leader's transformational leadership behavior (DV) Job satisfaction (DV) Daily work demands (C)

Note. T1 = Time 1, T2 = Time 2, T3 = Time 3. LMX = Leader-Member Exchange PA = Positive affect. MO = Moderator, C = Control variables, IV = Independent variable, ME = Mediator, DV= Dependent variable.

As common in ESM studies, some participants skipped some of the daily surveys (e.g., completing the only morning, lunch, or end-of-work surveys; n = 67 pairs) or did not participate in the daily surveys after the initial survey (n = 78 pairs). Thus, I removed 145 pairs of participants from the analysis, leaving 118 dyads with 236 individual participants (45% of 263 dyads from the initial survey) as the final sample for the study. After conducting multiple independent t-tests, I concluded that the final sample was not significantly different from those removed group in terms of age, job tenure, leader-member relationship tenure, and LMX (ps = .57 − .93). Further, a series of chi-square tests revealed that there was no difference between the dropped sample and the final sample regarding their sex, education, and industry (ps = .34 − .86). The final sample provided 511 matched day-level data points out of 590 points possible (118 dyads x 5 workdays; a compliance rate of 87%).

On average, participants completed the morning survey (T1) at 8:53 a.m. (SD = 0.35), post-lunch survey (T2) at 1:38 p.m. (SD = 0.71), and the end-of-work survey (T3) at 6:42 p.m. (SD = 0.81). The final sample of *leaders* consisted of 39% women and 61% men. On average, they were 44.36 years old (SD = 6.76) and worked in their current job for 11.07 years (SD = 5.35). All of the leader participants held a bachelor's or higher degree. On average, they were 33.78 years old (SD = 3.79) and worked in their current job for 3.21 years (SD = 2.27). The final sample of *followers* consisted of 47% women and 53% men. The majority of follower participants held a bachelor's or higher degree (92%). The average length of the leader/follower relationships was 3.12 years (SD = 2.89). Participants represented a wide variety of industries, including education (32%), marketing (30%), IT and technology (15%), health services (9%), hospitality (8%), and others (6%). Regarding the interactions at work, all dyadic participants had a regular group meeting every morning and frequent casual discussions several times at work.

Day-Level Measures by Leaders (Independent Variable and Mediator)

Leader microbreaks. Leader's microbreaks were assessed at T2 with a measure developed and validated by previous microbreak research (Kim et al., 2017; 2018). The nine items included short descriptions of prototypical microbreaks activities. This measure asked leaders to recall their *short, informal respites taken voluntarily during their morning working hours* and then rate how often they engaged in those break activities (1 = *Never* to 5 = *Very Frequently)*: two items each for relaxation, nutrition- intake, and cognitive activities, and three items for social activities. The items were averaged, and higher scores represent more frequent engagement in microbreaks. A sample item was "stretching, walking around the office, or physically relaxing for short minute." The average Cronbach's alpha ranged .70 – .81 across days.

Leader positive affect. Positive affect was assessed at T3 with a 6-item scale adapted from Watson et al's (1988) Positive Affect Negative Affect Scale (PANAS). Leaders indicated how extensively they had felt the positive emotions *during the afternoon at work* (i.e., happy, enthusiastic, active, concentrating, confident, interested), using a 5-point Likert scale (1 = *None* to 5 = *To a Great Extent*). The average Cronbach's alpha ranged .87 – .93 across days.

Day-Level Measures by Followers (Dependent Variables)

Leader transformational leadership behavior. At T3, followers rated how often their leader's transformational leadership behavior toward them during the afternoon, using a 4-item scale of daily transformational leadership (Lanaj et al., 2016). An example item was "This afternoon at work, my leader challenged a workgroup member (including me) to rethink the way he/she does (I do) things" (1= *Never* to 5 = *Five or More Times*). The average Cronbach's alpha ranged .85 – .90 across days.

Follower job satisfaction. Job satisfaction was assessed at T3 with a 3-item scale of Camman et al.'s Michigan Organizational Assessment Questionnaire (1979). Participants indicated their agreement to each item assessing their daily afternoon job satisfaction (e.g., "This afternoon, I am satisfied with my job") on a 5-point Likert scale (1= *Strongly Disagree* to 5 = *Strongly Agree*). The average Cronbach's alpha ranged .89 – .94 across days.

Day-Level Control Variables

To avoid any confounding effects, I included several control variables for all endogenous variables (i.e., leader's positive affect and all dependent variables) in the path model. To predict leader's positive affect in the afternoon (T3), I controlled for leader's morning positive affect (T1), lunch hour satisfaction (T2), and daily work demands (T3) because baseline affective state (Ilies et al., 2007), lunch break experiences (Bosch, Sonnentag, & Pinck, 2018; Trougakos et al., 2014), and daily work demands (Ilies et al., 2007), could influence affective state at work. To assess morning positive affect, I used the same descriptors from PANAS (Watson et al., 1988) and response options to rate how extensively they felt the emotions *in the morning*. I measured leader's lunch hour satisfactions with a single item: "Today, I am satisfied with my lunch break activities" (1= *Strongly Disagree* to 5 = *Strongly Agree*). In addition, daily work demands were assessed at the end of the workday (T3) with a short three-item Quantitative Workload Inventory (QWI; Spector & Jex, 1998; 1 = *Strongly Disagree* to 5 = *Strongly Agree*). An example item was "Today, I had a lot of work to do." The average Cronbach's alpha ranged .88 – .92 across days.

To predict leader's transformational leadership behavior (reported by follower), I controlled for follower's morning positive affect (T1). Because raters' previous affective state could influence their rating on others' performance (Antonioni & Park, 2001), I used the same PANAS items and response options to assess how extensively the followers felt the positive

emotions *in the morning*. The average Cronbach's alpha ranged .83 – .86 across days. To predict follower's job satisfaction outcome, follower's morning positive affect (T1) was controlled for to rule out the baseline effects of their affective state on their subsequent affective/attitudinal work outcome (i.e., job satisfaction). I measured this control variable using the same PANAS scale. I also assessed follower's lunch hour satisfactions (T2) and day-specific work demands (T3) as control variables to predict their day-specific afternoon job satisfaction outcome. I used the same lunch hour satisfaction measure for both leaders and followers. In addition, I used the short QWI measure and response options to rate the followers' work demands. The average Cronbach's alpha ranged .86 – .91 across days.

Person-Level Measure of LMX by Followers (Moderator)

LMX was assessed with the 10-item scale that Liden and Maslyn developed (1998; Multidimensional LMX scale). Followers indicated the quality of relationship with their leaders (e.g., "I like my supervisor very much as a person," "I am impressed with my supervisor's knowledge of his/her job") on a 5-point Likert scale (1= *Strongly Disagree* to 5 = *Strongly Agree*). The Cronbach's alpha was .85.

Construct Validity

I ran a multilevel confirmatory factor analysis (MCFA) to examine the construct validity of all within-person measures by leaders (i.e., leader microbreaks, positive affect, and work demands) and followers (i.e., transformational leadership behavior, follower job satisfaction, and follower work demands) separately. I loaded all items onto their corresponding latent constructs by each rater. Results showed that this three-factor MCFA model of leaders fit the data ($\chi^2[264] = 859.91$, $p < .001$, confirmatory fit index [CFI] = .91, root mean square error of approximation [RMSEA] = .06, standard root mean square residual [SRMR] = .07 at the within-person level

and .09 at the between-person level). Results of the followers' three-factor MCFA model also showed that it fit the data ($\chi^2[64] = 128.38$, $p < .001$, CFI = .95, RMSEA = .04, SRMR = .04 at the within-person level and .16 at the between-person level). Given that our sample size ratio is not sufficient to test the estimation at Level 2 (1:5; Bentler & Chou, 1987), these results (i.e., relatively high CFI and RMSEA values of leader model and high SRMR value at between-person of follower model) were not surprising.

Therefore, I used item parceling technique to estimate MCFA model of the current study. Specifically, I generated four balanced parcels for leader microbreaks (originally 8 items) based on each type of microbreaks (i.e., relaxation, nutrition, social, and cognitive activities) and three parcels for leader positive affect (originally 6 items). I assigned the item with the highest factor loading to the first parcel, the second highest to the second parcel, and so forth (Hall, Snell, Foust, 1999; Landis, Beal, & Tesluk, 2000). Results showed that this three-factor MCFA model with item-parceling fit the data better ($\chi^2[48] = 69.22$, $p < .01$, confirmatory fit index [CFI] = .99, root mean square error of approximation [RMSEA] = .03, standard root mean square residual [SRMR] = .03 at the within-person level and .08 at the between-person level). For followers' measures, I generated three balanced parcels for follower positive affect (originally 6 items) using the same technique as I did in leaders' measures. Results showed that this three-factor with parcels MCFA model of followers fit the data better ($\chi^2[118] = 210.88$, $p < .001$, confirmatory fit index [CFI] = .96, root mean square error of approximation [RMSEA] = .04, standard root mean square residual [SRMR] = .04 at the within-person level and .09 at the between-person level). Therefore, I conclude that the current measures did capture the distinct constructs as intended.

Analysis

Because of the nested structure of the data (daily responses within dyads), I structured

the data following Kenny, Kashy, and Cook's (2006) dyadic data structure. Figure 2 shows the necessary data structure for the first 25 rows and first 9 columns of the data. Dyad is an ID variable unique to each dyad in the dataset; Day is an index of each day out of 5 days of participation (1-5); others represent study variables.

Figure 2

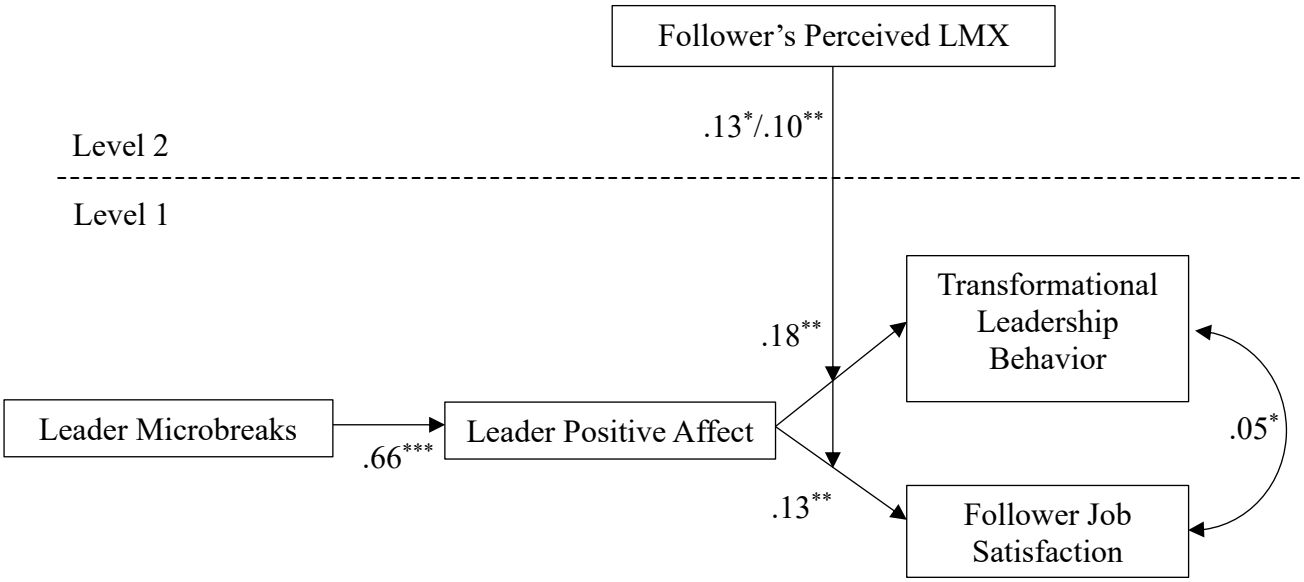
Data structure of the study

	Dyad	Day	LM_LMX	GM_LMX	LT1_PA	LT2_MBALL	LT3_PA	MT3_TLB
1	64970820	1	4.00	3.00	3.17	3.00	4.17	2.00
2	64970820	2	4.00	3.00	2.33	2.28	3.33	3.00
3	64970820	3	4.00	3.00	3.00	3.06	3.67	3.00
4	64970820	4	4.00	3.00	3.33	3.72	2.67	2.50
5	64970820	5	4.00	3.00	3.67	2.71	3.33	2.50
6	55802088	1	3.40	3.00	2.67	1.76	3.67	3.25
7	55802088	2	3.40	3.00	3.17	2.00	2.83	3.25
8	55802088	3	3.40	3.00	3.00	1.58	3.33	2.50
9	55802088	4	3.40	3.00	3.00	2.97	3.00	3.00
10	55802088	5	3.40	3.00	4.67	2.00	4.17	4.25
11	75239716	1	2.60	3.00	3.33	2.99	4.00	3.00
12	75239716	2	2.60	3.00	4.00	4.06	3.83	3.00
13	75239716	3	2.60	3.00	3.00	3.17	2.17	2.00
14	75239716	4	2.60	3.00	4.00	3.38	2.83	2.25
15	75327872	2	2.60	3.00	3.33	2.25	3.83	3.00
16	75327872	3	2.60	3.00	3.00	2.17	2.67	2.00
17	75327872	4	2.60	3.00	2.67	2.75	3.67	2.25
18	59672239	1	2.60	3.00	3.00	2.88	4.00	4.50
19	59672239	2	2.60	3.00	4.00	1.77	3.83	4.25
20	59672239	3	2.60	3.00	4.00	2.63	4.83	3.50
21	59672239	4	2.60	3.00	3.67	2.20	3.33	3.25
22	50948932	1	2.70	3.20	4.00	1.84	3.17	3.25
23	50948932	2	2.70	3.20	4.00	2.04	3.00	3.00
24	50948932	3	2.70	3.20	2.67	2.66	2.67	3.00
25	50948932	4	2.70	3.20	3.00	2.04	3.00	3.00

I tested the hypothesized model (See Figure 3) using Mplus 7.4 (Muthén & Muthén, 1998−2015) to simultaneously estimate all path coefficients in a multilevel path analysis model. The day-level predictor (i.e., leader's microbreaks) and control variables (i.e., both leader's and follower's morning positive affect, lunch hour satisfaction, and work demands) were centered at each person's average scores to remove between-person variances in these variables, so that the within-dyad relations in the model were not confounded by individual differences (Ilies et al., 2007). The moderator, LMX, was modeled as a person-level variable, representing differences across followers. In the analysis, I specified the level-1 fixed effects of leader's morning microbreaks on his or her positive affect during the afternoon, and the random effects of the leader's positive affect on two dependent variables (i.e., transformational leadership behavior and follower's job satisfaction). Also, I specified the direct fixed effects of leader's microbreaks on two dependent variables. In the multilevel model, the control variables (leader's and follower's morning baseline positive affect, lunch hour satisfaction, and workload) were specified to have fixed effects on each matching endogenous variable. Last, I specified the level-2 cross-level moderation effects of LMX on the slopes of leader's positive affect on transformational leadership behavior and follower's job satisfaction.

Figure 3

Multilevel path analysis results



H2: Indirect effect of leader microbreaks on transformational leadership behavior = .12; 95% CI [0.050 to 0.202]

H3: Indirect effect of leader microbreaks on follower job satisfaction = .09; 95% CI [0.035, 0.152]

Control Variable: Control variables are not included in this figure for simplicity: Leader's morning positive affect, lunch-hour satisfaction and day-specific work demands were controlled for leader's afternoon positive affect. Follower's morning positive affect was controlled for their rating on leader's transformational leadership behavior. Follower's morning positive affect, lunch-hour satisfaction, and day-specific work demands were controlled for follower's job satisfaction.

One-way random-factor ANOVA results showed that the between-person variance was significant for the leader's microbreaks (ICC(1) = .21, F (117, 514) = 4.61, $p < .001$); leader's positive affect (ICC(1) = .35, F (117, 514) = 3.49, $p < .001$); follower's report on transformational leadership behavior (ICC(1) = .32, F (117, 514) = 4.60, $p < .001$); and follower's job satisfaction (ICC(1) = .21, F (117, 514) = 2.93, $p < .001$). These results indicated that there was substantial variance in the studied variables at the between-person level, which warrants the use of multilevel modeling for analyzing the current data (See Table 2). Multilevel mediation hypotheses at Level 1-1-1 were tested via Monte Carlo bootstrapping simulation procedures, with the open-source software R for fixed-effect indirect effects of leader microbreaks on outcome variables via leader positive affect, found at http://www.quantpsy.org/medmc/medmc.htm (Bauer, Preacher, & Gil, 2006; Preacher & Selig, 2010).

Table 2

Variance Decomposition of Major Study Variables

Construct	Within-person variance	Between-person variance	% of within-person variance
Leader's microbreaks (IV)	.210	.168	55.6%
Leader's positive affect in the afternoon (ME)	.352	.197	64.2%
Transformational leadership behavior (DV)	.320	.263	55.2%
Follower's job satisfaction (DV)	.206	.090	69.6%

Note. Level 1 n = 511, Level 2 n = 118. The percentage of within-person variance was calculated by the formula: within-person variance/the sum of between-person and within-person variance. IV = Independent variable, ME = Mediator, DV= Dependent variable.

CHAPTER 4: RESEARCH FINDINGS

Preliminary Analyses

Table 3 presents the means, standard deviations, and intercorrelations for the study variables. Regarding bivariate correlations, as expected, at the day-level within days, leader's microbreak during the morning was positively related with his or her own positive affect in the afternoon ($r = .53$, $p < .001$) and the follower's report of leader's transformational leadership behavior ($r = .28$, $p < .001$). But leader's microbreak was not related to follower's job satisfaction ($r = .07$, $p = .098$). Leader's positive affect was positively related to both follower's report of leader's transformational leadership behavior ($r = .28$, $p < .001$) and follower's job satisfaction ($r = .18$, $p < .001$). Transformational leadership behavior was positively related to follower's job satisfaction ($r = .25$, $p < .001$).

Table 3

Means, Standard Deviations, and Intercorrelations among Study Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Follower's Perceived LMX [a] (MO)											
2. Leader Morning PA (C)	.05		.03	.13*	.15**	-.03	.01	.03	.14**	.05	.02
3. Leader Lunch-Hour Satisfaction (C)	.06	.01		-.09*	.08	.10*	-.04	.06	.19***	.06	.06
4. Leader Work Demands (C)	-.05	.22*	-.01		.05	-.07	.06	-.08	-.11*	-.10*	-.05
5. Follower Morning PA(C)	-.09	.14	-.03	.10		.04	-.01	.01	-.03	-.01	-.01
6. Follower Lunch-Hour Satisfaction (C)	.12	.08	.14	-.17	.03		-.09*	.08	.13**	.15**	.14**
7. Follower Work Demands (C)	.06	.13	-.07	.23*	-.05	-.13		-.01	.05	-.03	.06
8. Leader Microbreaks (IV)	.12	.09	.06	.08	-.13	-.06	.20*		.53***	.28***	.07
9. Leader Afternoon PA (ME)	-.04	.21*	.28**	.02	.05	-.05	.17	.50***		.28***	.18***
10.Transformational Leadership Behavior (DV)	.11	.15	.06	.09	.13	.10	.04	.39***	.22*		.25***
11. Follower Job Satisfaction (DV)	-.002	-.02	-.02	-.06	.11	.14	.23*	.15	.16	.19*	
M	3.30	3.14	3.26	3.29	3.02	3.36	3.36	2.70	3.14	2.83	3.08
Within-person *SD*		0.50	0.61	0.54	0.41	0.61	0.52	0.40	0.52	0.50	0.40
Between-person *SD*	0.96	0.70	0.79	0.78	0.60	0.84	0.74	0.66	0.73	0.79	0.52

Note. Correlations below the diagonal represent between-person correlations (n = 118). Correlations above the diagonal represent day-level correlations (ns range = 511 ~ 515). To calculate between-person correlations, within-person scores were averaged across days. [a] between-person variable. LMX = Leader-Member Exchange. PA = positive affect. MO = Moderator, C = Control variables, IV = Independent variable, ME = Mediator, DV= Dependent variable.

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Hypothesis Testing

Table 5 presents the results from the multilevel path analysis that estimated all the path coefficients, including those at level 1 and level 2, simultaneously (Table 4 describes the model only including main effects of leader microbreaks on mediator as well as outcome variables without a cross-level moderator). The results showed that leader's morning microbreaks predicted his or her positive affect during the afternoon ($\gamma = .66$, $p < .001$), which supports Hypothesis 1.

Table 4

Unstandardized Coefficients of the Multilevel Path Model (Main Effects Only)

Variable	Leader Afternoon PA			Transformational Leadership Behavior			Follower Job Satisfaction		
	Estimate	*S.E.*	95% of CI	Estimate	*S.E.*	95% of CI	Estimate	*S.E.*	95% of CI
Intercept	3.05***	0.05	[2.953, 3.143]	2.75***	0.05	[2.645, 2.858]	3.09***	0.04	[3.020, 3.155]
Leader Morning PA (C)	.12	0.07	[-.014, .252]						
Leader Lunch-Hour Satisfaction (C)	.14**	0.05	[.039, .242]						
Leader Work Demands (C)	-.06	0.07	[-.188, .073]						
Follower Morning PA (C)				-.02	0.07	[.095, .349]	-.02	0.05	[-.112, .078]
Follower Lunch-hour satisfaction (C)							.07	0.04	[-.018, .149]
Follower Work Demands (C)							.05	0.04	[-.018, .120]
Leader Microbreaks (IV)	.64***	0.09	[.466, .810]	.22**	0.07	[.042, .313]	-.03	0.07	[-.170, .103]
Leader's Afternoon PA (ME)				.18***	0.07	[.095, .349]	.16**	0.05	[.057, .264]
Within-level residual variance	.25***	0.02	[.207, .299]	.29***	0.03	[.228, .357]	.19***	0.02	[.151, .243]
Between-level residual variance	.20***	0.05	[.104, .286]	.25***	0.09	[.158, .335]	.08***	0.03	[.046, .116]

Note. Level 1 n = 511, Level 2 n = 118. *SE* = standard error. [a] between-person variables; [b] cross-level interaction; All results came from one path model that included all variables. LMX = Leader-Member Exchange. PA = positive affect. C = Control variables, IV = Independent variable, ME = Mediator, DV= Dependent variable. CI = Confidence Interval

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 5

Unstandardized Coefficients of the Multilevel Path Model (Full Model)

Variable	Leader Afternoon PA			Transformational Leadership Behavior			Follower Job Satisfaction		
	Estimate	*S.E.*	95% of CI	Estimate	*S.E.*	95% of CI	Estimate	*S.E.*	95% of CI
Intercept	3.04***	0.05	[2.946, 3.137]	2.19***	0.17	[1.857, 2.514]	2.67***	0.13	[2.409, 2.928]
LMX [a]				-.29	0.19	[-.655, .079]	-.23	0.13	[-.495, .026]
Leader Morning PA (C)	.13*	0.06	[.018, .244]						
Leader Lunch-Hour Satisfaction (C)	.13*	0.05	[.026, .233]						
Leader Work Demands (C)	-.07	0.07	[-.201, .057]						
Follower Morning PA (C)				-.01	0.07	[-.155, .127]	-.01	0.05	[-.103, .092]
Follower Lunch-hour satisfaction (C)							.07	0.04	[-.016, .148]
Follower Work Demands (C)							.06	0.03	[-.007, .127]
Leader Microbreaks (IV)	.66***	0.09	[.486, .829]	.20**	0.06	[.080, .317]	-.04	0.07	[-.178, .099]
Leader's Afternoon PA (ME)				.18***	0.05	[.081, .287]	.14***	0.04	[.056, .217]
LMX x Leader's PA [b]				.13*	0.06	[.007, .258]	.10**	0.04	[.016, .186]
Within-level residual variance	.24***	0.02	[.198, .285]	.28***	0.03	[.221, .347]	.19***	0.02	[.145, .236]
Between-level residual variance	.22***	0.05	[.123, .309]	.20*	0.09	[.034, .369]	.07**	0.03	[.021, .124]

Note. Level 1 n = 511, Level 2 n = 118. *SE* = standard error. [a] between-person variables; [b] cross-level interaction; All results came from one path model that included all variables. LMX = Leader-Member Exchange. PA = positive affect. C = Control variables, IV = Independent variable, ME = Mediator, DV= Dependent variable. CI = Confidence Interval

*$p < .05$, **$p < .01$, ***$p < .001$.

Hypothesis 2 stated that leader's microbreaks would have an indirect effect on his or her transformational leadership behavior through the leader's increased positive affect. The mediation effect test based on 20,000 Monte Carlo bootstrapping cases found that the indirect effect of leader's microbreaks on follower's report of leader's transformational leadership behavior via positive affect was .12, with a 95% bias-corrected bootstrap confidence interval (CI) of 0.050 to 0.202. Thus, Hypothesis 2 was supported. Hypothesis 3 predicted that the indirect effect of leader's microbreaks on follower's job satisfaction through the leader's increased positive affect. Consistent with the hypothesis, the results showed the significant indirect effect of leader's microbreaks on the follower's job satisfaction (.09; 95% CI [0.035, 0.152]), mediated by the leader's positive affect. Thus, Hypothesis 3 was also supported.

I tested a cross-level moderation effects of follower's perceived LMX on the day-level relationships between leader's positive affect and transformational leadership behavior (H4a) as well as between leader's positive affect and follower's job satisfaction (H4b). The results from the multilevel path analysis (See Table 5) indicated that LMX was positively associated with the random slopes of leader's positive affect on transformational leadership behavior ($\gamma = .13$, $p = .038$) as well as on the follower's job satisfaction ($\gamma = .10$, $p = .019$). I conducted simple slope tests to confirm the nature of the interaction effects using the method recommended by Preacher, Curran, and Bauer (2006). I tested the moderation effects to determine whether the estimated effects differed at lower (-1 *SD*) and higher (+1 *SD*) LMX. Simple slope tests (Figure 4) showed that the day-level relationship between leader's positive affect and transformational leadership behavior was stronger and significant at the high level of LMX ($\gamma = .31$, $p < .001$) but became nonsignificant at the low level of LMX ($\gamma = .06$, $p = .504$). The difference between the two slopes was also significant (0.26, $p = .038$). Further, the day-level relationship between leader's

positive affect and follower's job satisfaction (Figure 5) was stronger under the condition of high LMX ($\gamma = .24$, $p < .001$), but the relationship was not significant under the condition of low LMX ($\gamma = .04$, $p = .502$). The difference between the two slopes was significant (0.20, $p = .019$). Therefore, both Hypotheses 4a and 4b were supported, respectively.[1]

[1] To confirm my findings, I tested the same model including all variables with LMX reported by leaders. The results showed that leader report of LMX strengthened the positive relationships between leader's positive affect and follower report of transformational leadership behavior ($\gamma = .12$, $p = .017$) as well as follower's job satisfaction ($\gamma = .10$, $p = .007$). All other paths showed the same patterns in the hypothesized model (Output is shown in the Appendix D). Thus, the crossover moderation effects of LMX were robust regardless of follower or leader reports. The correlational relationship between LMX reported by leaders and followers was .76, $p < .001$.

Figure 4

LMX moderates the relationship between leader's positive affect and transformational leadership behavior

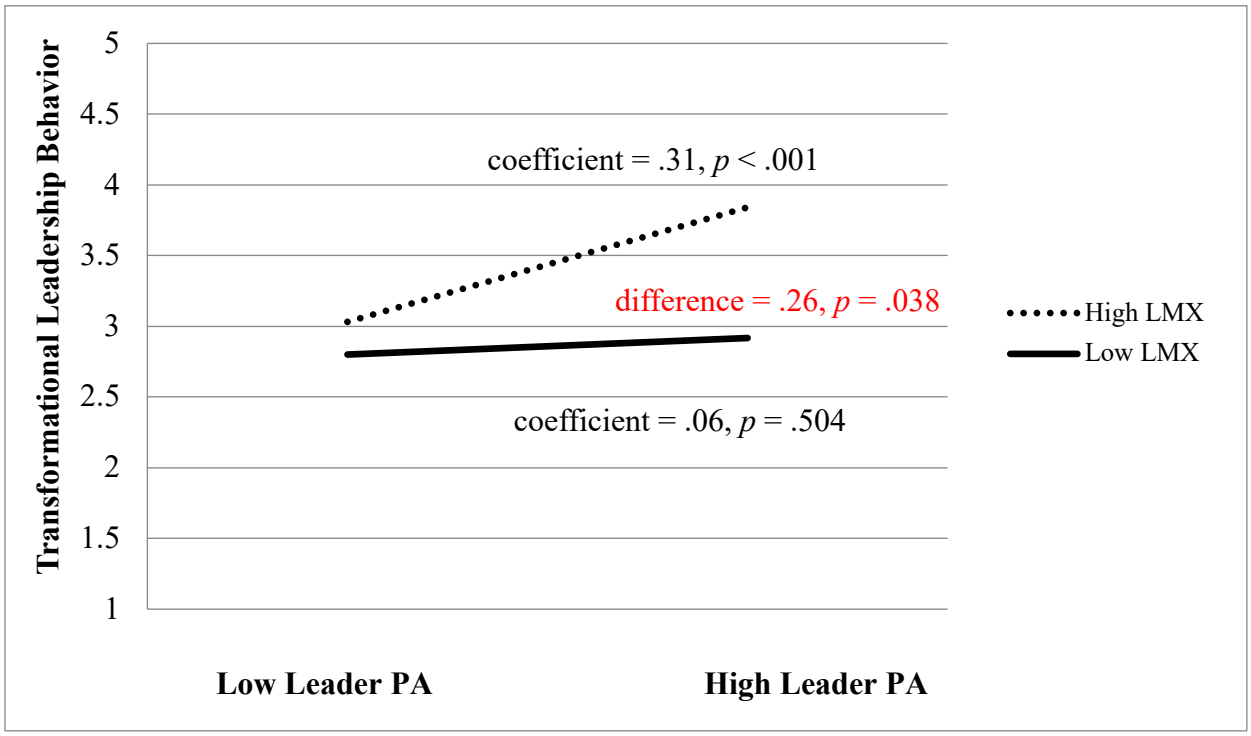
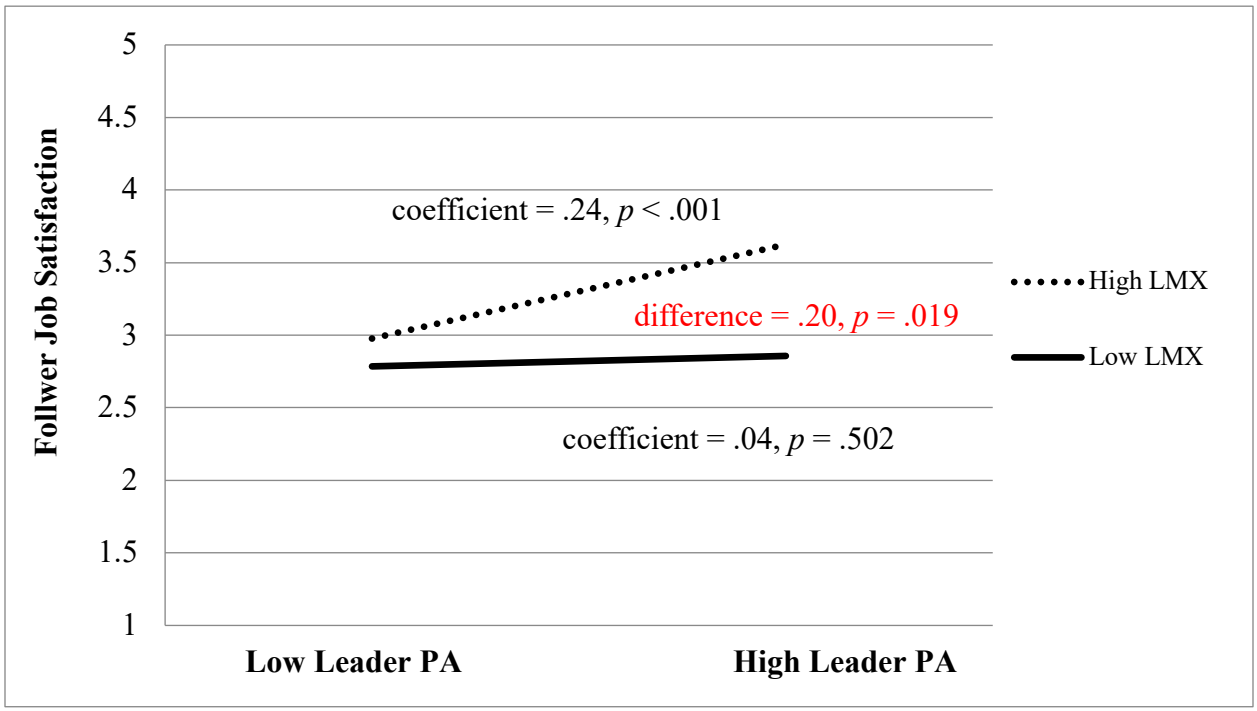


Figure 5

LMX moderates the relationship between leader's positive affect and follower's job satisfaction



I conducted a series of analyses to test the moderated mediation effects (H5a and H5b). These tests determine whether the estimated indirect effects of leader's microbreaks on leader's transformational leadership behavior and follower's job satisfaction via the leader's increased positive affect, differed across the lower (–1 *SD*) and higher (+1 *SD*) LMX conditions (See Table 5). The results showed that leader's microbreaks had nonsignificant indirect effects under the condition of *low* LMX: .05 (95% CI [-0.082, 0.213]) on transformational leadership behavior and .03 (95% CI [-0.059, 0.168]) on follower's job satisfaction. However, the indirect effects became significant under the condition of *high* LMX: .20 (95% CI [0.059, 0.417]) on transformational leadership behavior and .16 (95% CI [0.075, 0.349]) on follower's job satisfaction. The effects were significantly different between the two conditions: .15 (95% CI [0.009, 0.335]) for transformational leadership behavior outcome and .14 (95% CI [0.017, 0.308]) for follower's job satisfaction outcome. Thus, Hypothesis 5a and 5b were supported, respectively.

Table 6

Results of Conditional Indirect Effects of Leader's Microbreaks on the Outcomes via Positive Affect

	Transformational Leadership Behavior			Follower's Job Satisfaction		
Condition	Estimate	*SE*	95% CI	Estimate	*SE*	95% CI
Low LMX	.08	0.07	[-.082, .213]	.07	0.06	[-.059, .168]
High LMX	.22	0.06	[.059, .417]	.20	0.06	[.075, .349]
Difference	.15	0.08	[.009, .335]	.13	0.06	[.017, .308]

Note. SE = Standard of error. CI = Confidence Interval. LMX = Leader-member exchange.

Supplementary Analysis

Given that previous research on microbreaks differentiated four types of microbreaks (Kim et al., 2017; 2018), I further explored detailed effects of the four types of leader's morning microbreaks on his or her positive affect in the afternoon as well as the two dependent variables. I entered all four variables of leader's microbreaks in a multilevel path model to simultaneously predict leader's positive affect, follower's report of leader's transformational leadership behavior, and follower's job satisfaction. When controlling for morning positive affect, lunch hour satisfaction, and daily workload, the multilevel analysis results revealed that all four types of leader's microbreaks—relaxation ($\gamma = .15$, $p = .027$), nutrition-intake ($\gamma = .18$, $p = .009$), social ($\gamma = .18$, $p = .020$), and cognitive microbreaks ($\gamma = .14$, $p = .038$)—were independently and positively associated with the leader's positive affect during the afternoon. The mediation effects tests based on 20,000 Monte Carlo bootstrapping cases found that the indirect effects of leader's microbreaks on transformational leadership behavior were: .03 for relaxation (95% CI [0.006, 0.065]), .04 for nutrition-intake (95% CI [0.006, 0.078]), .03 for social (95% CI [0.005, 0.067]), and .03 for cognitive microbreaks (95% CI [0.002, 0.062]). In addition, results show that the indirect effects of leader's microbreaks on follower's job satisfaction were: .05 for relaxation (95% CI [0.006, 0.106]), .06 for nutrition-intake (95% CI [0.013, 0.127]), .06 for social (95% CI [0.009, 0.123]), and .05 for cognitive microbreaks (95% CI [0.003, 0.097]) on follower's job satisfaction through leader's increased positive affect (See Table 7). These results were in line with the major analyses outcomes in that the indirect effects of leader's microbreaks on the two outcomes via leader's positive affect were stronger for employees with high LMX than for employees with low LMX (See Appendix D).

Table 7

Bootstrapping Results for Indirect Effects of Four Types of Micro-Breaks

	Coefficient	95% of CI
Leader Relaxation MB → Leader PA → Transformational Leadership Behavior	.03	.006, .065
Leader Nutrition-intake MB → Leader PA → Transformational Leadership Behavior	.04	.006, .078
Leader Social MB → Leader PA → Transformational Leadership Behavior	.03	.005, .067
Leader Cognitive MB → Leader PA → Transformational Leadership Behavior	.03	.002, .062
Leader Relaxation MB → Leader PA → Follower Job Satisfaction	.05	.006, .106
Leader Nutrition-intake MB → Leader PA → Follower Job Satisfaction	.06	.013, .127
Leader Social MB → Leader PA → Follower Job Satisfaction	.06	.009, .123
Leader Cognitive MB → Leader PA → Follower Job Satisfaction	.05	.003, .097

Note. Level 1 n = 511, Level 2 n = 118. *SE* = standard error. MB = Microbreaks, PA = positive affect, CI = Confidence Interval.

CHAPTER 5: DISCUSSION

Summary of Findings

By conducting a daily dyadic (leader-follower) diary study for five consecutive working days, the current study focused on the effects of leader's microbreaks on one's positive affect as well as two dependent variables (i.e., transformational leadership behavior and follower's job satisfaction). As proposed based on AET (Weiss & Cropanzano, 1996) and EASI model (Van Kleef et al., 2004), I found leader's morning microbreaks predicted one's afternoon positive affect, which in turn, led to greater afternoon transformational leadership behavior and follower's job satisfaction. Moreover, the current study found follower's perceived LMX strengthened the indirect effects of leader's morning microbreaks on follower's report of leader's transformational leadership behavior as well as follower's own job satisfaction via increased leader's afternoon positive affect. Overall, my study represents the first attempt to address the interpersonal and crossover effects of microbreaks in leader-member dyadic structure by finding that leader's recovery-promoting activities (i.e., microbreaks) influence the quality of leadership performance and follower's job satisfaction through leader's positive affect mechanism and introduces the relationship difference (i.e., LMX) on those relationships.

Theoretical Implications

The current findings have several important theoretical implications for recovery and leadership literature. First, this study sheds light on the benefits of microbreaks on leadership behaviors. The present study is the first to provide empirical evidence on how leader's microbreaks translate into follower's report of leader's leadership behavioral outcome through leader's positive affect. The current findings indicated that leaders would benefit from microbreaks to increase their daily psychological well-being and quality of leadership. In other

words, microbreaks can be leader's positive and effective energy management strategy at work for their work-related outcome (cf. Lanaj, Foulk, & Erez, 2019). Despite previous findings on the effects of microbreaks, recovery research only paid attention to individual's task-performance as a behavioral outcome of microbreaks (cf., Kim et al., 2018). Thus, a wide array of outcomes in relation to microbreaks helps us to comprehend the phenomena and effects of microbreaks at work. Further, given that leadership behavior is important for the workgroup and fluctuates within a workday (Lanaj et al., 2016), it is valuable to investigate what contributes to daily leadership behavior at work. The findings of this study, then, contributed to a more comprehensive understanding of recovery at work—in this case, the short-term effects of leader's microbreaks on his or her behavior quality through increased positive affect. Thus, this study offers implications to both the recovery and leadership literature by suggesting that microbreaks can be beneficial recovery and energy management activities at work that promote leadership quality (Lanaj et al., 2019).

Second, beyond the within-person effects of microbreaks, my study addressed the crossover effects of microbreaks. By integrating AET (Weiss & Cropanzano, 1996) and EASI model (Van Kleef, 2009), this study supported the crossover effects of leader's microbreaks on follower's job satisfaction through increased leader's positive affect. As employees take their microbreaks in the work setting, the effects of these recovery activities at work may not be limited within themselves but could transmit to others within the workplace. To explain an intuitive relationship between leader's microbreaks and follower's job satisfaction, this study successfully identified leader's positive affect as a key mediator. Thus, my findings suggested that recovery at work was important and influential on not only for the employee themselves but also for their coworkers in the work setting. Simultaneously, my findings directly provided an

important theoretical implication to AET literature by demonstrating that microbreaks were affective events that have impacts on others' within a social group (e.g., workgroup). AET has been widely studied to support a diverse type of affective events at work (See Cropanzano et al., 2017, for a review). However, the tenets of AET have been limited in within-person context: an individual's affective event influences one's affective response which lead to change in his or her cognitive and behavioral consequences. My empirical findings on the crossover effect of leader's positive affective event at work (i.e., microbreaks) on his or her follower's job satisfaction, therefore, suggested that AET can be employed in not only within-person structure but also dyadic-structure (e.g., interpersonal relationship) within the workgroup.

Third, I found that a personal relational resource (i.e., LMX) plays an important role in determining the magnitude of the effects of leader's positive affect on one's behavioral outcome as well as follower's work-related outcome. The current study found that only employees in high LMX experienced the effects of their leader's positive affect on perceived transformational leadership behavior and their own job satisfaction, whereas, those whom in low LMX were not very influenced by their leader's affective state. When employee perceived his or her leader's positive affect, LMX appeared to influence the extent to which s/he positively responds to this affective effect. The current study's significant cross-level interaction effects of LMX and leader's positive affect have important implications for the recovery and stress literature, as reconfirming that the degree of recovery effects is not uniform for everyone (cf., Kim et al., 2018). Further, this boundary condition has implications for the leadership literature by emphasizing the role of LMX in the interpersonal benefits of recovery activity at work. That is, a leader's recovery at work is more beneficial for employees with high LMX in that they depend more on leader's state positive affect because their leader's affective, cognitive, and behavioral

expressions are very important social information to them. These findings align with the idea of EASI model that the quality of relationship determines the meaning and consequences of other's affect within a social group (Van Kleef, 2009). In sum, this study contributed to identifying LMX as a boundary condition for the crossover effects of leader's microbreaks on follower's job satisfaction via leader's state positive affect.

My supplementary findings also showed the effects of four types of leader's morning microbreaks (i.e., relaxation, nutrition-intake, social, and cognitive activities) on his or her afternoon transformational leadership behavior via increased afternoon positive affect. Previous microbreaks study did not make a consensus on the benefit of four types of microbreaks (cf., Kim et al., 2017; 2018). I would like to explain these findings using two perspectives: study design and the data. Previous research on microbreaks (cf., Kim et al., 2017; 2018) measured microbreaks during the entire working hours (e.g., 9 a.m. to 6 p.m.). The current study, however, separated the measurement of microbreaks and outcome variables. Microbreaks were assessed after the morning at work and outcomes after the workday ended, and I found the preceding effects of all four types of microbreaks. That is, microbreaks facilitate energy and resources used to accomplish within-workday work responsibilities and to enhance the quality of work. These results support previous findings by Hunter and Wu (2016) that showed the positive relationship between breaks taken early in the shift and post-breaks resources.

In addition, I would like to highlight that intercorrelations among microbreak activities are relatively small in this study (.28 to .44), compared to .01 to .52 (Kim et al., 2017) and -.02 to .57 (Kim et al., 2018). Specifically, previous two studies generally showed nutrition-intake activities were positively correlated with other types of microbreaks. However, this study showed nutrition-intake microbreaks were only positively related to social activities $r = .35$, p

< .001) but not associated with relaxation (r = .15, p = .098) and cognitive activities (r = .17, p = .073). This suggests that morning nutrition-intake may have co-occurred during social breaks but may have not concurred with other breaks in this study. The relatively lower intercorrelations between microbreaks might have allowed all four types of microbreaks to have their effect on positive affects as well as work-outcomes. Thus, this study informed and highlighted the importance of the timing of microbreaks to the work break literature.

Practical Implications

The current study provides organizations with several practical insights regarding organizational well-being and work outcomes. The present study confirmed the benefits of microbreaks by finding the additional outcomes of leadership behaviors as well as the crossover effects of leader's microbreaks on follower's job satisfaction via leader's positive affect. First, the present findings suggested microbreaks could be beneficial not only for the actors themselves but also their partners (e.g., followers or coworkers) in the work setting. Organizations, therefore, should recognize the important role of microbreaks as effective recovery opportunities at work. In particular, the current study highlights the importance of leader's microbreaks at work. Accordingly, organizations could develop seminars that promote leader's recovery opportunities at work and their positive effects for the workgroup.

Considering leader's microbreaks had conditional indirect effects on leader's behavioral and follower's cognitive outcome via leader's positive affect, managers should understand the importance of their relationship with each individual follower within the workgroup. Because leaders selectively choose and spend their time and resource to each individual follower based on the quality of the relationship, employees with low LMX are less likely to receive their leader's resources and attention when the leader has resources (e.g., positive affect). Therefore,

organizations should train their leaders to invest their affective resources consistently and equally to their followers. Accordingly, leaders should be aware of their influence on others at work and avoid the unequal leadership behaviors based on their personal relationship or preference with the individual follower.

Unlike previous findings from the microbreak literature (cf., Kim et al., 2017; 2018), this study found the positive effects of nutrition-intake microbreaks on affective well-being as well as a behavioral outcome at work. It may be that different findings arose from the timing of nutrition-intake microbreaks. The previous two studies measured employees' microbreaks during the afternoon (Kim et al., 2017) or during the entire workday (Kim et al., 2018), whereas my study only focused on microbreaks during the morning at work. Therefore, organizations could acknowledge the benefits of *morning* nutrition-intake microbreaks when they make decisions on policies or workplace design regarding the work environment. For example, they may want to offer some light snacks for employees who skipped breakfast or a cup of coffee for those who need stimuli in the morning at work.

Limitations and Future Research Directions

I used more rigorous methodological approaches to capture the effects of leader's microbreaks: daily surveys for five consecutive days in leader-member dyads using multiple time point assessments, and multisource of ratings. These methods reduced concerns about common-method bias (Podsakoff et al., 2003). However, I acknowledge a few limitations to be addressed in future research. First, the measurement of microbreaks was based on self-reports which still could raise the issue for common method bias (Podsakoff et al., 2003). Because this study was a correlational design, it was difficult to address causal inference. Thus, future studies might employ on different methods to assess microbreaks, such as monitoring, observation, or

experimental setting. For example, to examine the crossover effects of microbreaks in the work setting, employees could observe and rate their leaders' or coworkers' microbreaks. In addition, future research might conduct an experimental design to control engagement in microbreaks.

Second, the current study only introduced a positive affect mechanism to explain the relationship between leader's microbreaks and transformational leadership behavior and follower's job satisfaction via increased leader's positive affect. However, the present model did not address potential effects of negative affect from microbreaks, such as physical strain or turnover intention (e.g., microbreaks → strain or negative affect → turnover intention). That is, future study might address other mechanisms of microbreaks by focusing on the roles of negative affect. In addition, the current study only focused on proximal and immediate effects of microbreaks on cognitive and behavioral outcomes within workplace. Accordingly, future research may want to pay attention to the relatively longer effects of microbreaks, such as post-work behaviors in the personal life domain (e.g., work-family facilitation) or next day's morning resource level (e.g., morning vigor).

Although my study was the first attempt to investigate the crossover effects of microbreaks in leader-member dyads, future research could expand the findings to team- or organizational-level structures. Specifically, the crossover of microbreaks may not be limited to dyads, but rather it might be extended to other group members. Further, it is possible to study microbreaks and consequences in broader perspectives above and beyond within-person and dyadic structure. For example, some teams or organizations might have stronger recovery or health friendly climate and culture than others (Zweber, Henning, & Magley, 2016). Future studies, therefore, might examine microbreaks and their effects in team- or organization-level outcomes.

CHAPTER 6: CONCLUSION

A leader's level of resources is essential for the leader's own functioning and the organization's regarding leadership effectiveness, follower's work outcomes, and organizational success. The present study provides empirical evidence that leader's recovery-promoting activities at work (e.g., microbreaks) have implications for their daily performance and follower's cognitive work-related outcome. Emphasizing crossover effects of microbreaks with daily dyadic study, I showed that engaging in microbreaks may lead to increased positive affect, which in turn, results in more transformational leadership behavior and higher follower's job satisfaction over the course of the workday. My work is the first to propose an affective mechanism that connects leader's recovery activities at work and one's leadership behavior as well as follower's work outcome. Further, by introducing the LMX as a moderator, I showed that the crossover effects of microbreaks rely on the relational resource between actor and partner. Accordingly, this study calls for greater organizational and societal attention to the implications of microbreaks on individual employees as well as others at work.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

ILLINOIS

OFFICE OF THE VICE CHANCELLOR FOR RESEARCH

Office for the Protection of Research Subjects
805 W. Pennsylvania Ave., MC-095
Urbana, IL 61801-4822

Notice of Approval: New Submission

August 23, 2018

Principal Investigator	YoungAh Park
CC	Sooyeol Kim
Protocol Title	*Employees Work and Nonwork Experiences*
Protocol Number	18848
Funding Source	Polytechnic University of Hong Kong – SOW approved and determined to not need a sub-award through SPA
Review Type	Expedited 7
Status	Active
Risk Determination	no more than minimal risk
Approval Date	08/23/2018
Expiration Date	08/22/2021

This letter authorizes the use of human subjects in the above protocol. The University of Illinois at Urbana-Champaign Institutional Review Board (IRB) has reviewed and approved the research study as described.

The Principal Investigator of this study is reponsible for:

- Conducting research in a manner consistent with the requirements of the University and federal regulations found at 45 CFR 46.
- Requesting approval from the IRB prior to implementing modifications.
- Notifying OPRS of any problems involving human subjects, including unanticipated events, participant complaints, or protocol deviations.
- Notifying OPRS of the completion of the study.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
IORG0000014 • FWA #00008584
217.333.2670 • irb@illinois.edu • oprs.research.illinois.edu

APPENDIX B: SURVEY MEASURES – ORIGINAL - ENGLISH

One Time General Survey for Leaders

LMX (Liden & Maslyn, 1998)

FOR LEADERS ONLY,

The following statements are about your follower whom you are participating in the study. Please read each statement carefully and rate how you feel about your follower. *(Leaders do not have to answer below questions).*

(1 = *strongly disagree* to 5 = *strongly agree*)

1. I like my follower very much as a person.
2. My follower is the kind of person one would like to have as a friend.
3. My follower is a lot of fun to work with.
4. My follower defends my work actions to a superior, even without complete knowledge of the issue in question.
5. My follower would come to my defense if I were "attacked" by others.
6. I do work for my follower that goes beyond what is specified in my job description.
7. My follower is willing to apply extra efforts, beyond those normally required, to further the interests of my work group.
8. I am impressed with my follower's knowledge of his/her job.
9. I respect my follower's knowledge of and competence on the job.
10. I admire my follower's professional skills.

One Time General Survey for Followers

LMX (Liden & Maslyn, 1998)

FOR FOLLOWERS ONLY,

The following statements are about your supervisor at work. Please read each statement carefully and rate how you feel about your supervisor. *(Leaders do not have to answer below questions).*

(1 = *strongly disagree* to 5 = *strongly agree*)

11. I like my supervisor very much as a person.
12. My supervisor is the kind of person one would like to have as a friend.
13. My supervisor is a lot of fun to work with.
14. My supervisor defends my work actions to a superior, even without complete knowledge of the issue in question.
15. My supervisor would come to my defense if I were "attacked" by others.
16. I do work for my supervisor that goes beyond what is specified in my job description.
17. I am willing to apply extra efforts, beyond those normally required, to further the interests of my work group.
18. I am impressed with my supervisor's knowledge of his/her job.
19. I respect my supervisor's knowledge of and competence on the job.
20. I admire my supervisor's professional skills.

Daily Survey for Leaders

Morning (T1-8:30)

Positive Affect/Negative Affect (Watson et al., 1988)

This scale consists of a number of words that describe different feelings and emotions in today. Read each item and then indicate to what extent you feel this way this morning at your work.

(1) = Very slightly or not at all (2) = A little (3) = Moderately (4) = Quite a bit (5) = Extremely

1. Happy
2. Enthusiastic
3. Active
4. Concentrating
5. Confident
6. Interested

After Lunch (T2-13:00)

Leader's Micro-Breaks (Kim, Park, & Niu, 2017; Kim, Park, & Headrick, 2018)

Please rate the frequency with which you engage in the following informal respites (1 = *never* to 5 = *very frequently*).

"How often did you engage in the following informal respites voluntarily (above and beyond your officially provided breaks) (e.g., lunch hour, fixed breaks) *during the morning working hours* at work?

1. Stretching, walking around the office, or relaxing briefly
2. Daydreaming, gazing out the office windows, taking a quick nap, or any other psychological relaxation
3. Drinking caffeinated beverages (e.g., energy drinks, coffee, black or green tea)
4. Snacking (e.g., cookies, chocolates) or drinking non-caffeinated beverages (e.g., juice, water, vitamin water)
5. Chatting with coworkers on non-work related topics
6. Texting, using instant messenger, or calling to reconnect with friends or family members
7. Checking personal SNS (e.g., Facebook, Twitter, or personal blogs) for non-work purpose
8. Reading books, newspapers, or magazines for personal learning or entertainment.
9. Surfing the Web for entertainment (e.g., watching short video clips, playing a game)

After-work (T3-17:30)

Positive Affect/Negative Affect (Watson et al., 1988)

This scale consists of a number of words that describe different feelings and emotions in today. Read each item and then indicate to what extent you feel this way this morning at your work.

(1) = Very slightly or not at all (2) = A little (3) = Moderately (4) = Quite a bit (5) = Extremely

1. Happy
2. Enthusiastic
3. Active
4. Concentrating
5. Confident
6. Interested

Lunch-hour satisfaction

The following statements are about how you feel at your lunch-hour. Please read the statement carefully and decide if you ever felt this way about your lunch-hour.

(1 = *strongly disagree* to 5 = *strongly agree*)

"Today, I am satisfied with my lunch break activities"

Daily Workloads (Spector & Jex, 1998; 3 out of 5 items)
The following statements are about how you feel at work. Please read each statement carefully and decide if you ever felt this way about your job.
(1 = *strongly disagree* to 5 = *strongly agree*)

1. Today, I had to work really fast
2. Today, I had to finish work within a short time
3. Today, I had a lot of work to do

Daily Survey for Followers

Morning (T1)

Positive Affect/Negative Affect (Watson et al., 1988)
This scale consists of a number of words that describe different feelings and emotions in today. Read each item and then indicate to what extent you feel this way this morning at your work.
(1) = Very slightly or not at all (2) = A little (3) = Moderately (4) = Quite a bit (5) = Extremely

1. Happy
2. Enthusiastic
3. Active
4. Concentrating
5. Confident
6. Interested

After Lunch (T2-13:00)

Lunch-hour satisfaction
The following statements are about how you feel at your lunch-hour. Please read the statement carefully and decide if you ever felt this way about your lunch-hour.
(1 = *strongly disagree* to 5 = *strongly agree*)

"Today, I am satisfied with my lunch break activities"

After-work (T3-17:30)

Transformational Leadership (adapted from Podsakoff, et al, 1990, LQ and used in Lanaj et al., 2016, Journal of Applied Psychology)
Using the scale provided below, please indicate how often *your supervisor* engaged in the following behaviors ***DURINNG THE AFTERNOON WORKING HOURS of today at work*:**
1 = never
2 = once
3 = twice
4 = three times
5 = four times
6 = five or more times

1. My leader communicated a desirable goal or vision to a work group member (including me).
2. My leader communicated the importance of shared group goals.
3. My leader challenged a work group member (including me) to rethink the way he/she does things.
4. My leader displayed energy and enthusiasm to a work group member (including me).

Follower's Job Satisfaction (Camman et al.'s MOAQ, 1979)
The following statements are about how you feel at work. Please read each statement carefully and decide if you ever felt this way about your job *TODAY*.
(1 = *strongly disagree* to 5 = *strongly agree*)

1. This afternoon, all in all, I am satisfied with my job.
2. This afternoon, in general, I don't like my job (reverse)
3. This afternoon, in general, I like working here.

Daily Workloads (Spector & Jex, 1998; 3 out of 5 items)
The following statements are about how you feel at work. Please read each statement carefully and decide if you ever felt this way about your job.
(1 = *strongly disagree* to 5 = *strongly agree*)

1. Today, I had to work really fast
2. Today, I had to finish work within a short time
3. Today, I had a lot of work to do

APPENDIX C: SURVEY MEASURES – TRANSLATED – KOREAN

사전 설문 (상사)

LMX

다음은 본 연구에 함께 참여한 귀하의 부하직원에 대한 문항들입니다. 각 문항에 대한 귀하의 동의 정도를 표시해 주세요. (전혀 동의하지 않는다, 동의하지 않는다, 보통이다, 동의한다, 매우 동의한다)

1. 나는 내 부하직원을 인간적으로 좋아한다.
2. 내 부하직원은 나의 좋은 친구로 여길수 있을 만큼 좋은 사람이다.
3. 내 부하직원과 함께 일하는 것이 즐겁다.
4. 내 부하직원은 일의 시시비비를 떠나서 위선에 대해 나를 방어해준다.
5. 내 부하직원은 직장에서 만약 내가 누군가에게 공격을 당할 때에 나를 방어해 줄 사람이다.
6. 나는 내 업무가 요구하는 것 이상으로 내 부하직원을 위해 일한다.
7. 부하직원은 내 팀/부서의 이익을 위해서라면 평소 이상으로 기꺼이 노력을 기울일것이다.
8. 나는 내 부하직원의 업무 지식을 인상깊게 여긴다.
9. 나는 내 부하직원의 업무관련 능력과 지식을 존경한다.
10. 나는 내 부하직원의 전문적 스킬 혹은 기술을 존경한다.

사전 설문 (부하직원)

LMX

다음은 귀하의 상사에 대한 문항들입니다. 각 문항에 대한 귀하의 동의 정도를 표시해 주세요. (전혀 동의하지 않는다, 동의하지 않는다, 보통이다, 동의한다, 매우 동의한다)

11. 나는 내 상사를 인간적으로 좋아한다.
12. 내 상사는 나의 좋은 친구로 여길수 있을 만큼 좋은 사람이다.
13. 내 상사와 함께 일하는 것이 즐겁다.
14. 내 상사는 일의 시시비비를 떠나서 위선에 대해 나를 방어해준다.

15. 내 상사는 직장에서 만약 내가 누군가에게 공격을 당할 때에 나를 방어해 줄 사람이다.
16. 나는 내 업무가 요구하는 것 이상으로 내 상사를 위해 일한다.
17. 나는 내 팀/부서의 이익을 위해서라면 평소 이상으로 기꺼이 노력을 기울일것이다.
18. 나는 내 상사의 업무 지식을 인상깊게 여긴다.
19. 나는 내 상사의 업무관련 능력과 지식을 존경한다.
20. 나는 내 상사의 전문적 스킬 혹은 기술을 존경한다.

일간 상사용 설문

아침 (T1-8:30) 설문

Positive Affect/Negative Affect in the morning (Watson et al., 1988)

아래 나열된 각 단어를 읽고 지금 현재 귀하께서 느끼는 기분의 정도를 가장 잘 나타낸 보기에 표시하여 주십시요.

(전혀 그렇지 않다, 약간 그렇다, 보통이다, 많이 그렇다, 아주 많이 그렇다)

1. 적극적인
2. 흥미있어 하는
3. 매우 기쁜
4. 활기찬
5. 자신감 있는
6. 집중력있는

점심 (T2-13:00) 설문

Leader's Micro-Breaks (Kim, Park, & Niu, 2017; Kim, Park, & Headrick, 2018)

다음은 업무시간중에 개인적인 휴식을 위해 자율적으로 할 수 있는 행동들을 서술한 것 입니다. 오늘 오전 근무시간중에 (공식적인 휴식시간 제외) 아래와 같은 휴식을 얼마나 자주 하셨는지 표시해 주십시요 (거의 하지 않았다, 가끔했다, 종종 했다, 자주하였다, 매우 자주 했다)

"나는 오늘 오전 업무 시간중에..."

1. 스트레칭, 사무실 주변을 잠깐 걷기 혹은 기타의 방법으로 신체적 휴식을 잠시동안 취했다.

2. 공상/명상/짧은 생각하기, 창밖을 바라보기, 혹은 자리에 앉아서 다른 방법으로 정서적으로 심적으로 짧게 휴식을 취했다.
3. 커피, 홍차, 녹차, 혹은 다른 카페인 함유 음료 (예: 박카스, 핫식스, 레드불)등을 마셨다.
4. 스낵이나 쿠키, 과자등 다른 간식을 먹거나, 혹은 카페인이 함유되어 있지 않은 음료 (예: 비타민워터, 주스)등을 마셨다.
5. 동료들과 짧게 대화(업무와 관련없는)를 나누었다.
6. 카카오톡, 라인, 텔레그램, 문자 메시지등의 메신저로 친구나 가족들과 연락하고 대화를 나누었다.
7. SNS (예: 페이스북, 인스타그램, 트위터)나 블로그에 접속하여 포스팅들을 확인하거나 남기곤 했다.
8. 책, 신문등 짧은 글읽기, 뉴스를 보기, 혹은 개인적인 목적으로 짧게 공부를 하였다 (예: 외국어)
9. 재미를 목적으로 짧은 동영상 (예: 유머, 짤방)을 보거나, 음악을 듣거나 웹툰 혹은 스마트폰으로 게임을 하였다. 혹은 웹서핑을 하였다. (비 업무 관련)

<u>저녁 (T3-17:30) 설문</u>

Positive Affect/Negative Affect in the morning (Watson et al., 1988)

아래 나열된 각 단어를 읽고 지금 현재 귀하께서 느끼는 기분의 정도를 가장 잘 나타낸 보기에 표시하여 주십시요.

(전혀 그렇지 않다, 약간 그렇다, 보통이다, 많이 그렇다, 아주 많이 그렇다)

1. 적극적인
2. 흥미있어 하는
3. 매우 기쁜
4. 활기찬
5. 자신감 있는
6. 집중력있는

Lunch-hour Satisfaction

아래 문장을 읽고 오늘 직장에서 귀하의 점심시간에 대한 동의도를 표시해 주세요.

(전혀 동의하지 않는다, 동의하지 않는다, 보통이다, 동의한다, 매우 동의한다)

"나는 오늘 내 점심 시간 내용 (휴식, 행동등등) 에 만족한다"

Daily Workloads (Spector & Jex, 1998; 3 out of 5 items)

아래 문장을 읽고 오늘 직장에서 귀하의 업무량에 대한 동의도를 표시해 주세요. (전혀 동의하지 않는다, 동의하지 않는다, 보통이다, 동의한다, 매우 동의한다)

1. 오늘 나는 일을 매우 빨리 처리해야 한다
2. 오늘 나는 짧은 시간에 일을 끝마쳐야 한다
3. 오늘 나는 정말 많은 일을 해야만 했다.

일간 부하직원용 설문

아침 (T1-8:30) 설문

Positive Affect/Negative Affect in the morning (Watson et al., 1988)

아래 나열된 각 단어를 읽고 지금 현재 귀하께서 느끼는 기분의 정도를 가장 잘 나타낸 보기에 표시하여 주십시요.

(전혀 그렇지 않다, 약간 그렇다, 보통이다, 많이 그렇다, 아주 많이 그렇다)

1. 적극적인
2. 흥미있어 하는
3. 매우 기쁜
4. 활기찬
5. 자신감 있는
6. 집중력있는

<u>점심 (T2-13:00) 설문</u>

Lunch-hour Satisfaction

아래 문장을 읽고 오늘 직장에서 귀하의 점심시간에 대한 동의도를 표시해 주세요. (전혀 동의하지 않는다, 동의하지 않는다, 보통이다, 동의한다, 매우 동의한다)

"나는 오늘 내 점심 시간 내용 (휴식, 행동등등) 에 만족한다"

<u>저녁 (T3-17:30) 설문</u>

Transformational Leadership Behavior (used in Lanaj et al., 2016, Journal of Applied Psychology)

오늘 오후 근무 시간중에 귀하의 상사가 아래와 같은 행동들을 부하직원 (본인포함)에게 얼마나 자주 하였는지 표시해 주십시요 (직접 보시거나 동료에게 들은것 포함). (거의 하지 않았다, 가끔했다, 종종 했다, 자주하였다, 매우 자주 했다)
"나의 상사는 오늘 오후 근무시간에..."

1. 바람직한 목표 및 비젼을 팀/부서내의 부하직원에게 소통하였다.
2. 우리 팀/부서의 목표의 중요성에 대해 소통하였다.
3. 부하직원에게 업무하는 방식에 대해 다시 생각해보도록 독려하였다.
4. 부하직원에게 열정과 에너지를 보여주었다.

Follower's Job Satisfaction (Camman et al.'s MOAQ, 1979)
아래 문장을 읽고 오늘 직장에서 귀하의 기분에 대한 동의도를 표시해 주세요. (전혀 동의하지 않는다, 동의하지 않는다, 보통이다, 동의한다, 매우 동의한다)

1. 오늘 오후시간동안 내 일에 대해서 만족한다.
2. 오늘 오후시간동안 나는 내 일이 싫었다.
3. 오늘 오후시간동안 나는 이곳에서 일하는 것이 즐거웠다.

Daily Workloads (Spector & Jex, 1998; 3 out of 5 items)
아래 문장을 읽고 오늘 직장에서 귀하의 업무량에 대한 동의도를 표시해 주세요. (전혀 동의하지 않는다, 동의하지 않는다, 보통이다, 동의한다, 매우 동의한다)

1. 오늘 나는 일을 매우 빨리 처리해야 한다
2. 오늘 나는 짧은 시간에 일을 끝마쳐야 한다
3. 오늘 나는 정말 많은 일을 해야만 했다.

APPENDIX D: DATA OUTPUT

Table 8

Results for Multiple T-Tests on Sample Comparison

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
GM_LMX	Equal variances assumed	.423	.516	-.344	261	.731	-.03949	.11467	-.26529	.18632
	Equal variances not assumed			-.342	242.997	.733	-.03949	.11545	-.26690	.18793
L_Age	Equal variances assumed	.194	.660	.396	261	.692	.33682	.84997	-1.33686	2.01050
	Equal variances not assumed			.397	252.731	.691	.33682	.84766	-1.33257	2.00621
L_Job_Tenure	Equal variances assumed	.898	.344	.394	261	.694	.25232	.64091	-1.00970	1.51433
	Equal variances not assumed			.391	243.045	.696	.25232	.64524	-1.01866	1.52330
M_Age	Equal variances assumed	.670	.414	-.570	261	.569	-.25482	.44689	-1.13479	.62515
	Equal variances not assumed			-.565	239.703	.573	-.25482	.45116	-1.14356	.63392
M_Job_Tenure	Equal variances assumed	.922	.338	-.085	261	.932	-.02321	.27152	-.55785	.51143
	Equal variances not assumed			-.085	243.164	.932	-.02321	.27332	-.56160	.51517

Table 9

Results for Multiple Chi-square Tests on Sample Comparison

Inclusion * Industry

Crosstab

Count

		Industry						Total
		education	marketing	IT	Health	Hospitality	Others	
Inclusion	Included	38	35	18	11	9	7	118
	Excluded	43	42	23	17	15	5	145
Total		81	77	41	28	24	12	263

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.922[a]	5	.860
Likelihood Ratio	1.927	5	.859
Linear-by-Linear Association	.114	1	.736
N of Valid Cases	263		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.38.

Inclusion * L_Sex

Crosstab

Count

		L_Sex		Total
		Men	Women	
Inclusion	Included	72	46	118
	Excluded	87	58	145
Total		159	104	263

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.028[a]	1	.867		
Continuity Correction[b]	.002	1	.967		
Likelihood Ratio	.028	1	.867		
Fisher's Exact Test				.900	.484
Linear-by-Linear Association	.028	1	.867		
N of Valid Cases	263				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 46.66.

b. Computed only for a 2x2 table

Table 9 (Cont'd)

Results for Multiple Chi-square Tests on Sample Comparison

Inclusion * M_Sex

Crosstab

Count

		M_Sex		
		Men	Women	Total
Inclusion	Included	63	55	118
	Excluded	85	60	145
Total		148	115	263

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.723[a]	1	.395		
Continuity Correction[b]	.526	1	.468		
Likelihood Ratio	.723	1	.395		
Fisher's Exact Test				.454	.234
Linear-by-Linear Association	.721	1	.396		
N of Valid Cases	263				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 51.60.

b. Computed only for a 2x2 table

Inclusion * L_Education

Crosstab

Count

		L_Education		
		Bachelor	Master or Doctorate	Total
Inclusion	Included	94	24	118
	Excluded	122	23	145
Total		216	47	263

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.888[a]	1	.346		
Continuity Correction[b]	.610	1	.435		
Likelihood Ratio	.884	1	.347		
Fisher's Exact Test				.419	.217
Linear-by-Linear Association	.885	1	.347		
N of Valid Cases	263				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.09.

b. Computed only for a 2x2 table

Inclusion * M_Education

Crosstab

Count

		M_Education			
		Associate	Bachelor	Master or Doctorate	Total
Inclusion	Included	9	104	5	118
	Excluded	10	133	2	145
Total		19	237	7	263

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.138[a]	2	.343
Likelihood Ratio	2.162	2	.339
Linear-by-Linear Association	.303	1	.582
N of Valid Cases	263		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 3.14.

Table 10

Mplus Output for the Hypothesized Model

```
MODEL RESULTS

                                                    Two-Tailed
                  Estimate       S.E.  Est./S.E.    P-Value

Within Level

 LT3_PA     ON
    LT2_MBA          0.658      0.088      7.508      0.000 Leader's microbreaks → Leader's PA
    LT1_PA           0.131      0.058      2.270      0.023
    LT3_LUN          0.130      0.053      2.444      0.015
    LT3_WL          -0.072      0.066     -1.099      0.272

 MT3_TLB    ON
    LT2_MBA          0.199      0.060      3.294      0.001
    MT1_PA          -0.014      0.072     -0.196      0.845

 MT3_JS     ON
    LT2_MBA         -0.039      0.071     -0.558      0.577
    MT1_PA          -0.005      0.050     -0.107      0.914
    MT3_LUN          0.066      0.042      1.568      0.117
    MT3_WL           0.060      0.034      1.760      0.078

 MT3_JS   WITH
    MT3_TLB          0.045      0.017      2.685      0.007

 Residual Variances
    LT3_PA           0.242      0.022     10.840      0.000
    MT3_TLB          0.284      0.032      8.862      0.000
    MT3_JS           0.191      0.023      8.176      0.000

Between Level

 S1         ON
    GMT_LMX          0.133      0.064      2.076      0.038 LMX on PA & Transformational Leadership Behavior

 S2         ON
    GMT_LMX          0.101      0.043      2.337      0.019 LMX on PA & Follower's Job Satisfaction

 MT3_TLB    ON
    GMT_LMX         -0.288      0.187     -1.540      0.124

 MT3_JS     ON
    GMT_LMX         -0.234      0.133     -1.762      0.078

 MT3_JS   WITH
    MT3_TLB          0.051      0.016      3.160      0.002

 Means
    LT3_PA           3.042      0.049     62.566      0.000

 Intercepts
    MT3_TLB          2.186      0.168     13.039      0.000
    MT3_JS           2.668      0.133     20.134      0.000
    S1               0.184      0.053      3.509      0.000 Leader's PA → Transformational Leadership Behavior
    S2               0.136      0.041      3.335      0.001 Leader's PA → Follower's Job Satisfaction

 Variances
    LT3_PA           0.216      0.048      4.542      0.000

 Residual Variances
    MT3_TLB          0.201      0.086      2.352      0.019
    MT3_JS           0.073      0.026      2.780      0.005
    S1               0.003      0.006      0.399      0.690
    S2               0.000      0.003      0.142      0.887
```

Table 11

Mplus Output for the Supplementary Analysis with Four Types of Microbreaks

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	
Within Level					
LT3_PA ON					
LT2_MB1	0.153	0.069	2.207	0.027	Leader's relaxation microbreaks → Leader's PA
LT2_MB2	0.184	0.070	2.615	0.009	Leader's nutrition-intake microbreaks → Leader's
LT2_MB3	0.179	0.077	2.335	0.020	Leader's social microbreaks → Leader's PA
LT2_MB4	0.144	0.069	2.080	0.038	Leader's cognitive microbreaks → Leader's PA
LT1_PA	0.134	0.055	2.425	0.015	
LT3_LUN	0.128	0.054	2.373	0.018	
LT3_WL	-0.071	0.066	-1.074	0.283	
MT3_TLB ON					
LT2_MB1	0.114	0.050	2.278	0.023	
LT2_MB2	0.024	0.052	0.470	0.638	
LT2_MB3	0.121	0.058	2.082	0.037	
LT2_MB4	-0.073	0.045	-1.607	0.108	
MT1_PA	-0.022	0.071	-0.313	0.754	
MT3_WL	-0.026	0.048	-0.545	0.586	
MT3_PA ON					
LT2_MB1	0.036	0.044	0.824	0.410	
LT2_MB2	-0.052	0.048	-1.081	0.280	
LT2_MB3	0.101	0.059	1.720	0.086	
LT2_MB4	-0.059	0.048	-1.217	0.223	
MT1_PA	0.102	0.049	2.077	0.038	
MT3_WL	0.037	0.048	0.775	0.438	
MT3_PA WITH					
MT3_TLB	0.061	0.017	3.703	0.000	
Residual Variances					
LT3_PA	0.241	0.022	10.768	0.000	
MT3_TLB	0.276	0.031	8.992	0.000	
MT3_PA	0.229	0.023	9.863	0.000	
Between Level					
S1 ON					
GMT_LMX	0.115	0.053	2.199	0.028	LMX on PA & Transformational Leadership Behavior
S2 ON					
GMT_LMX	0.104	0.050	2.101	0.036	LMX on PA & Follower's Job Satisfaction
MT3_TLB ON					
GMT_LMX	-0.262	0.146	-1.787	0.074	
MT3_PA ON					
GMT_LMX	-0.260	0.157	-1.657	0.097	
MT3_PA WITH					
MT3_TLB	0.062	0.028	2.188	0.029	
Means					
LT3_PA	3.042	0.049	62.564	0.000	
Intercepts					
MT3_TLB	2.164	0.165	13.084	0.000	
MT3_PA	2.046	0.201	10.194	0.000	
S1	0.191	0.051	3.754	0.000	Leader's PA → Transformational Leadership Behavior
S2	0.337	0.064	5.296	0.000	Leader's PA → Follower's Job Satisfaction
Variances					
LT3_PA	0.216	0.047	4.546	0.000	
Residual Variances					
MT3_TLB	0.221	0.086	2.573	0.010	
MT3_PA	0.149	0.042	3.571	0.000	
S1	0.001	0.007	0.133	0.894	
S2	0.001	0.004	0.145	0.885	

Table 12

Mplus Output for the Supplementary Analysis with LMX by Leaders

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	
Within Level					
LT3_PA ON					
LT2_MBA	0.658	0.088	7.508	0.000	Leader's microbreaks → Leader's PA
LT1_PA	0.131	0.058	2.270	0.023	
LT3_LUN	0.130	0.053	2.444	0.015	
LT3_WL	-0.072	0.066	-1.099	0.272	
MT3_TLB ON					
LT2_MBA	0.193	0.061	3.186	0.001	
MT1_PA	-0.017	0.072	-0.230	0.818	
MT3_WL	-0.026	0.048	-0.551	0.581	
MT3_JS ON					
LT2_MBA	-0.045	0.071	-0.631	0.528	
MT1_PA	-0.007	0.050	-0.140	0.889	
MT3_LUN	0.066	0.042	1.568	0.117	
MT3_WL	0.057	0.034	1.672	0.095	
MT3_JS WITH					
MT3_TLB	0.044	0.017	2.639	0.008	
Residual Variances					
LT3_PA	0.242	0.022	10.840	0.000	
MT3_TLB	0.283	0.032	8.864	0.000	
MT3_JS	0.189	0.023	8.168	0.000	
Between Level					
S1 ON					
LMT_LMX	0.121	0.051	2.382	0.017	LMX by Leaders on PA & Transformational Leadership Behavior
S2 ON					
LMT_LMX	0.103	0.038	2.717	0.007	LMX by Leaders on PA & Follower's Job Satisfaction
MT3_TLB ON					
LMT_LMX	-0.280	0.139	-2.009	0.045	
MT3_JS ON					
LMT_LMX	-0.257	0.114	-2.242	0.025	
MT3_JS WITH					
MT3_TLB	0.051	0.016	3.119	0.002	
Means					
LT3_PA	3.042	0.049	62.566	0.000	
Intercepts					
MT3_TLB	2.197	0.170	12.929	0.000	
MT3_JS	2.684	0.132	20.291	0.000	
S1	0.180	0.053	3.377	0.001	Leader's PA → Transformational Leadership Behavior
S2	0.131	0.041	3.193	0.001	Leader's PA → Follower's Job Satisfaction
Variances					
LT3_PA	0.216	0.048	4.542	0.000	
Residual Variances					
MT3_TLB	0.206	0.088	2.348	0.019	
MT3_JS	0.072	0.027	2.723	0.006	
S1	0.002	0.007	0.338	0.735	
S2	0.000	0.003	0.156	0.876	

Figure 6

R Output for Indirect Effect of Leader's Microbreaks on Transformational Leadership Behavior via Positive Affect

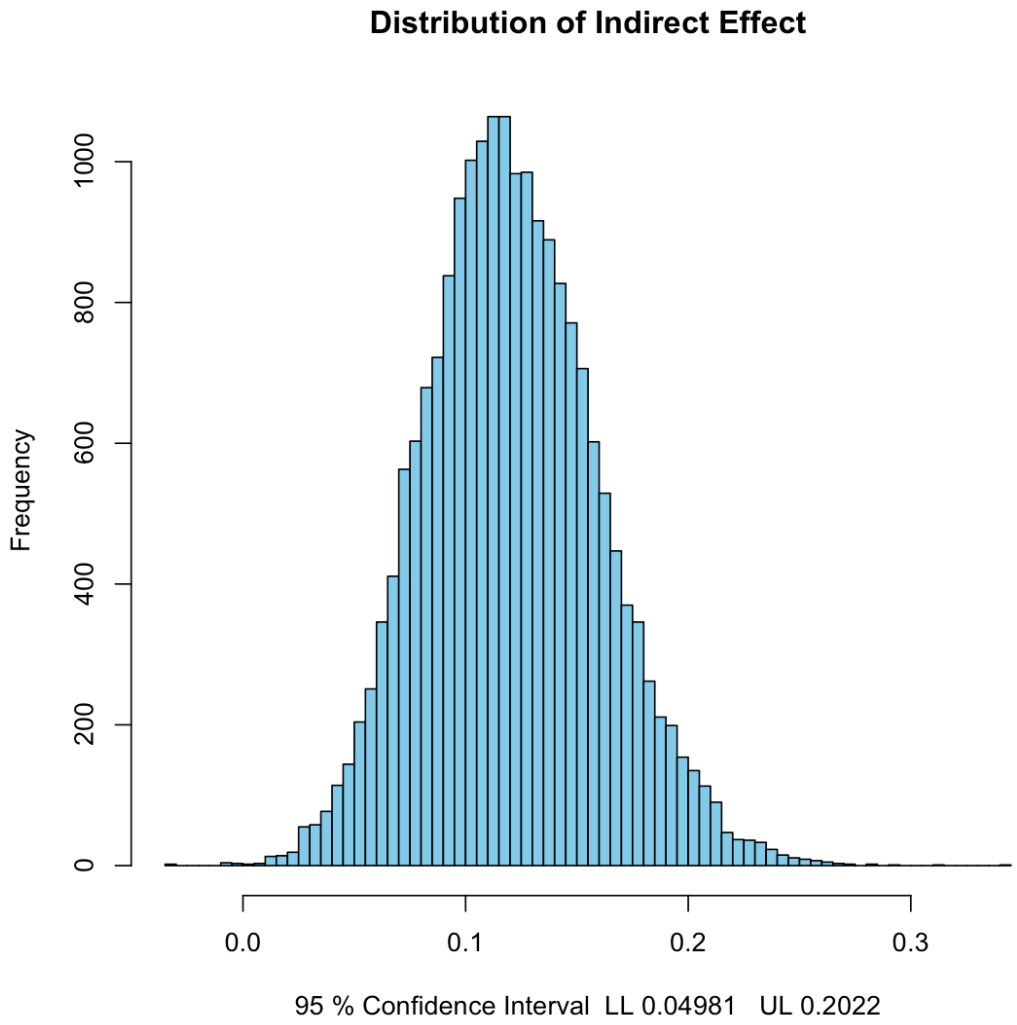


Figure 7

R Output for Indirect Effect of Leader's Microbreaks on Follower's Job Satisfaction via Positive Affect

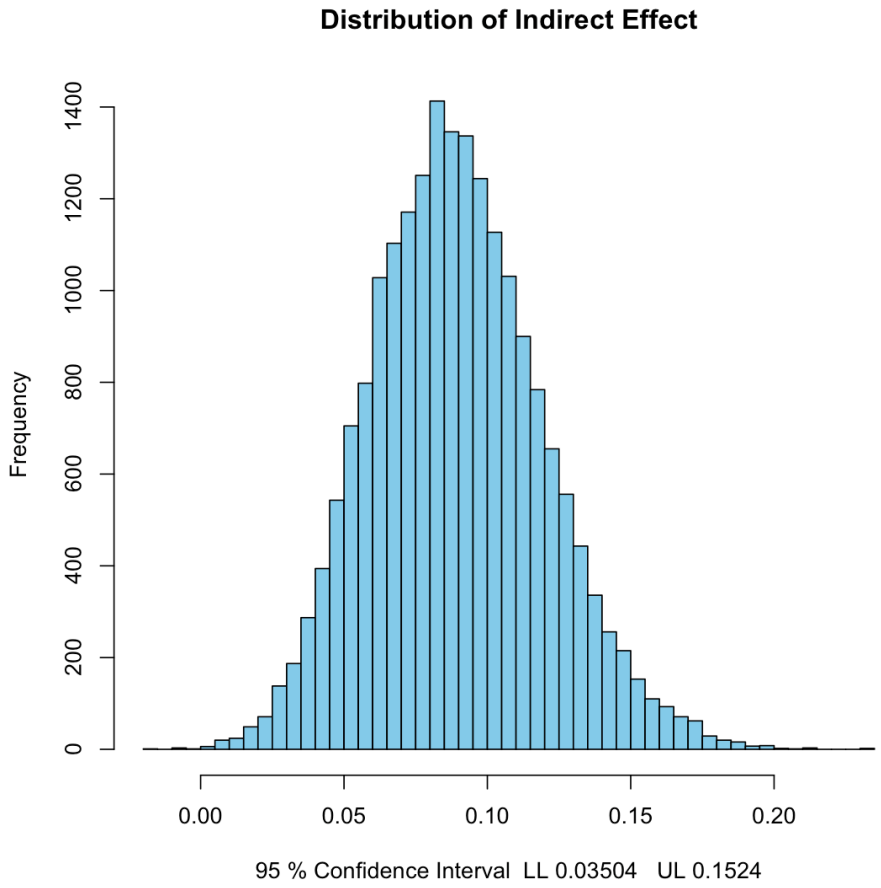
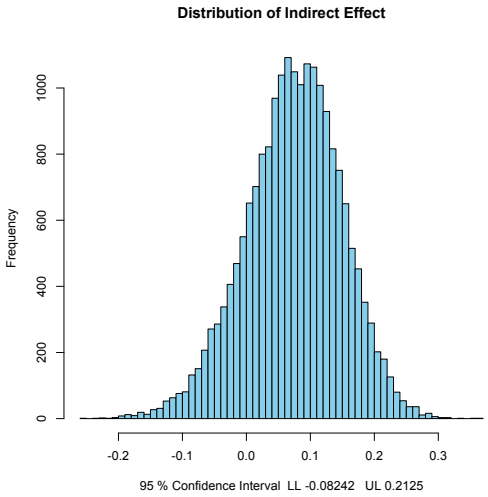
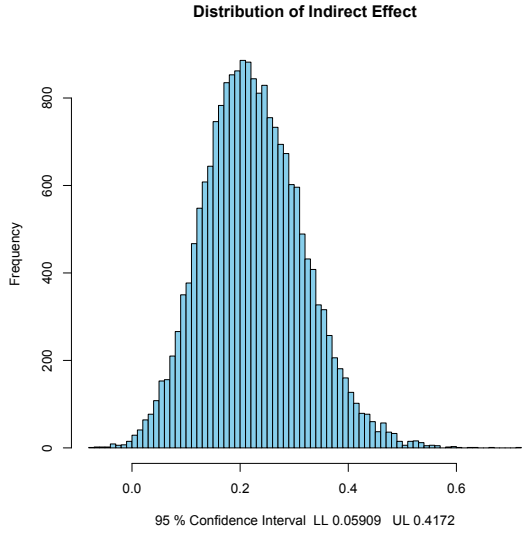


Figure 8

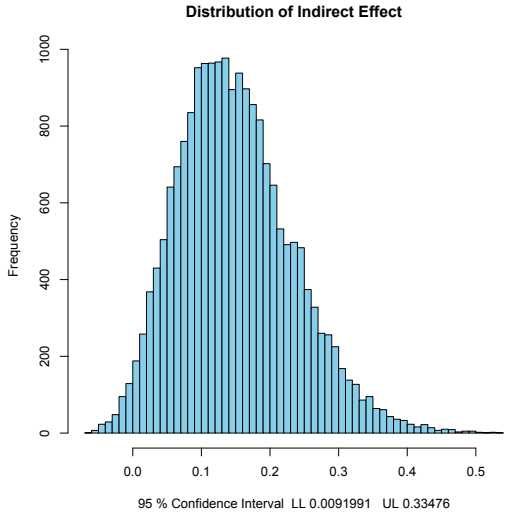
R Output for Conditional Indirect Effect of LMX on Transformational Leadership Behavior



CIs for Low LMX



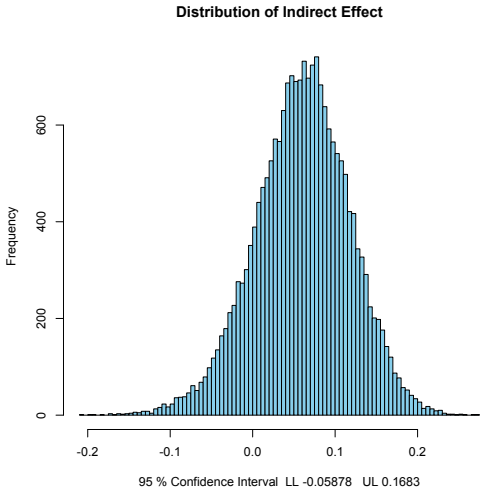
CIs for High LMX



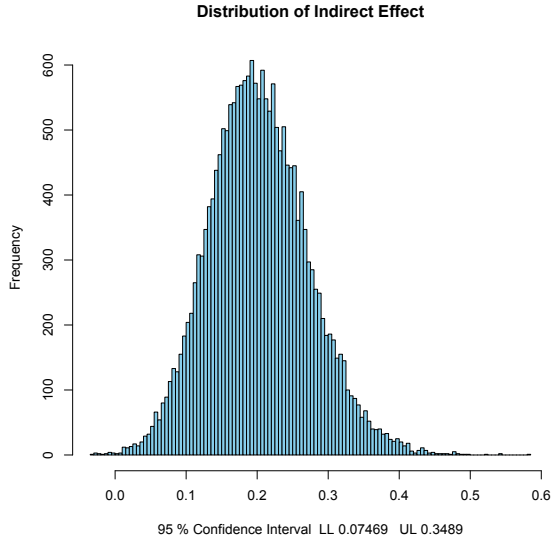
CIs for Difference

Figure 9

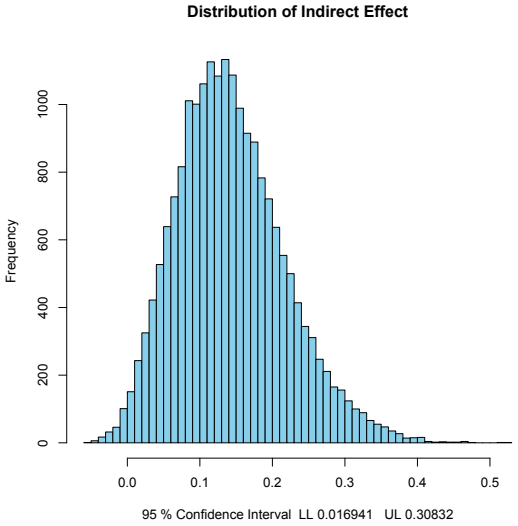
R Output for Conditional Indirect Effect of LMX on Follower's Job Satisfaction



CIs for Low LMX



CIs for High LMX



CIs for Difference